Acronis Backup & Recovery 11.5

Backing Up Microsoft Exchange Server Data

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Technologies used in this product are covered by the following patents: U.S. Patent # 7,047,380; U.S. Patent # 7,246,211; U.S. Patent # 7,318,135; U.S. Patent # 7,366,859; U.S. Patent # 7,636,824; U.S. Patent # 7,831,789; U.S. Patent # 7,886,120; U.S. Patent # 7,934,064; U.S. Patent # 7,949,635; U.S. Patent # 7,979,690; U.S. Patent # 8,069,320; U.S. Patent # 8,073,815; U.S. Patent # 8,074,035.

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1 Important notices

This document describes backup and recovery of Microsoft Exchange Server data by using Acronis Backup & Recovery 11.5 for Microsoft Exchange Server.

Important to know

Agent for Microsoft Exchange Server is included in the setup programs of both the stand-alone and advanced editions of Acronis Backup & Recovery 11.5. The functionality provided by the agent is the same in both setup programs. However, the following advanced features can be used only in advanced Acronis Backup & Recovery 11.5 configurations:

- **Comprehensive protection of Exchange clusters** (p. 50)

  Requires installation of Acronis Backup & Recovery 11.5 Management Server and installation of Agent for Exchange on each cluster node.
- **Express full backup** (p. 57)

  Requires installation of Acronis Backup & Recovery 11.5 Management Server and Acronis Backup & Recovery 11.5 Storage Node. Requires installation of the "Express backup and deduplication" add-on to Agent for Exchange.

  The "Express backup and deduplication" add-on is purchased separately. However, you do not need to purchase and install this add-on if Agent for Windows and its deduplication add-on are already installed on your Exchange server.

Other sources of information

For the most comprehensive information about the functionality provided by Acronis Backup & Recovery 11.5, please refer to

Acronis Backup & Recovery 11.5 Help

Web Help: http://www.acronis.eu/support/documentation/ABR11.5/

Built-in context-sensitive Help available in Acronis Backup & Recovery 11.5 management console by clicking the question-mark button .

For the purpose of convenience, this information is also presented in other sources. Use the ones that correspond to your preferences and chosen edition.

Installation information

Installation Help available in your setup program by clicking **View Installation Help**.

Installation Guide for advanced editions: http://www.acronis.eu/download/docs/abr11.5a/installguide

Installation Guide for stand-alone editions: http://www.acronis.eu/download/docs/abr11.5s/installguide

Information about the core functionality provided by Acronis Backup & Recovery 11.5

User Guide for advanced editions: http://www.acronis.eu/download/docs/abr11.5a/userguide

User Guide for stand-alone editions: http://www.acronis.eu/download/docs/abr11sw/userguide

Command-line interface

Command-line Reference (all editions): http://www.acronis.eu/download/docs/abr11.5/cmdlineref

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2 Overview

Acronis Backup & Recovery 11.5 enables you to back up the Mailbox server role of Microsoft Exchange Server. Mailbox servers host mailboxes and public folders. This data is most critical for any Exchange organization.

The following is a summary of the product's key features.

- **Support for Microsoft Exchange Server 2010** (p. 7)

  Acronis Backup & Recovery 11.5 supports Microsoft Exchange Server 2010 as well as Microsoft Exchange Server 2003/2007.
- **Express full backup method** (p. 26)

  This method is based on monitoring changes of the Exchange database files. Once the initial full backup is taken, all subsequent backups will only back up changes to this database without needing to read the entire database file. Combining this method with the data deduplication functionality makes it possible to back up large databases of 1TB or more during business hours and even over WANs.
- **Exchange clustering support** (p. 47)

  Acronis Backup & Recovery 11.5 supports SCC, CCR and DAG cluster configurations. You can choose to back up database replicas rather than active databases for minimal production impact. If the Mailbox role is moved to another server due to a switchover or a failover, the software will track all relocations of the data and safely back it up.
- **Continuous Data Protection** (p. 13)

  By using Continuous Data Protection, you can revert Exchange data to almost any point in time. If the most recent transaction log file survived, you can revert Exchange data to the point of failure.
- **Backup destinations** (p. 8)

  The backups can be saved to any type of storage supported by Acronis Backup & Recovery 11.5, except for Acronis Online Backup Storage, Acronis Secure Zone, and removable media.
- **Enhanced granular recovery** (p. 31)

  Browse Exchange Server database or mailbox backups and recover single or multiple mailboxes or just specific e-mails. You can also recover calendar items, notes, tasks and journal entries.
- **New recovery destinations**

  Besides being able to recover data to a live Exchange server, you can recover
  - Exchange databases to regular disk folders (p. 36).
  - E-mails and mailboxes to .pst files (p. 38).

3 General information

3.1 Agent for Exchange

Backing up Exchange data becomes available by using Acronis Backup & Recovery 11.5 Agent for Microsoft Exchange Server. This agent requires either of the following licenses:

- Acronis Backup & Recovery 11.5 for Microsoft Exchange Server.
- Acronis Backup & Recovery 11.5 Advanced Server SBS Edition.

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Acronis Backup & Recovery 11.5 Agent for Microsoft Exchange Server is referred to as Agent for Exchange later in this document.

Agent for Exchange is included in the setup programs of both the stand-alone and advanced editions of Acronis Backup & Recovery 11.5. The functionality provided by the agent is the same in both setup programs. However, the following advanced features can be used only in advanced Acronis Backup & Recovery 11.5 configurations:

- **Comprehensive protection of Exchange clusters** (p. 50)

  Requires installation of Acronis Backup & Recovery 11.5 Management Server and installation of Agent for Exchange on each cluster node.
- **Express full backup** (p. 57)

  Requires installation of Acronis Backup & Recovery 11.5 Management Server and Acronis Backup & Recovery 11.5 Storage Node. Requires installation of the "Express backup and deduplication" add-on to Agent for Exchange.

The "Express backup and deduplication" add-on is purchased separately. However, you do not need to purchase and install this add-on if Agent for Windows and its deduplication add-on are already installed on your Exchange server.

3.2 Supported operating systems

Agent for Exchange can be installed in the following operating systems:

- Windows Server 2003/2003 R2 – the Standard, Enterprise editions (x86, x64)
- Windows Server 2008 – the Standard, Enterprise editions (x86, x64)
- Windows Server 2008 R2 – the Standard, Enterprise, Datacenter, Foundation editions
- Windows Small Business Server 2003
- Windows Small Business Server 2008
- Windows Small Business Server 2011

3.3 Supported Microsoft Exchange Server versions

Agent for Exchange supports the following versions of Microsoft Exchange Server:

- **Microsoft Exchange Server 2003** - all editions, SP2 or later.

  Hotfix http://support.microsoft.com/kb/908072 must be installed.
- **Microsoft Exchange Server 2007** - all editions, all service packs.

  The Messaging API Client and Collaboration Data Objects (version 1.2.1) package must be installed. To download and install this package, visit http://www.microsoft.com/download/en/details.aspx?id=6248.
- **Microsoft Exchange Server 2010** - all editions, all service packs.

  The Messaging API Client and Collaboration Data Objects (version 1.2.1) package must be installed. To download and install this package, visit http://www.microsoft.com/download/en/details.aspx?id=6248.

Note: *It is important to keep your Exchange servers up-to-date. This ensures the best performance, integrity and security for all Exchange services and data.*

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3.4 Supported backup locations

The table below shows which of Acronis Backup & Recovery 11.5 backup locations are supported by Agent for Exchange.

Storages	General	Backup specific		Recovery specific	
	Backup and Recovery	Express full backup mode	CDP backup scheme	Granular recovery	Recovery using Acronis Active Restore
Online Backup Storage	-	-	-	-	-
Personal vaults	+	-	+	+	+
Acronis Secure Zone	-	-	-	-	-
Centralized vaults	+	+ Dedup. vaults only	+	+	+
Local folders	+	-	+	+	+
Removable media (CD, DVD, BD, Floppy), and external storages (RDX, USB HDD, USB Flash Drives) in the "Removable media" mode.	-	-	-	-	-
External storages (RDX, USB HDD, USB Flash Drives) in the "Fixed drive" mode.	+	-	+	+	+
Tape devices	+	-	-	-	-
Network folders	+	-	+	+	+
FTP/SFTP	+	-	+	+	-

3.5 Permissions for Exchange backup and recovery

The table below contains the minimal permissions required to back up and recover Exchange server data.

- When creating a backup plan, make sure that the account with the required permissions is specified in **What to back up** > **Access credentials**.
- When creating a recovery task, make sure that the account with the required permissions is specified in **Where to recover** > **Access credentials**.
- To be able to back up, recover, and browse mailboxes, make sure that the account you use is associated with the mailbox. The mailbox has to be initialized and available in a global address list. The mailbox database containing the associated mailbox must be mounted. The user account that is associated with the mailbox must reside in the same forest as the Exchange server.

Exchange	Backup	Recovery

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Server version	Database backup (with the **Metadata collection** (p. 54) option set to **Include list of mailboxes**)	Mailbox backup and database backup (with the **Metadata collection** (p. 54) option set either to **Include mailboxes and folders** or to **Include e-mails**)	Database recovery	Mailbox recovery
2003	Membership in Domain backup operators group. http://technet.microsoft.com/en-us/library/bb123926(EXCHG.65).aspx	Full Exchange administrator rights for the domain. http://technet.microsoft.com/en-us/library/bb123926(EXCHG.65).aspx	Full Exchange administrator rights for the domain. http://technet.microsoft.com/en-us/library/bb123926(EXCHG.65).aspx	Full Exchange administrator rights for the domain. http://technet.microsoft.com/en-us/library/bb123926(EXCHG.65).aspx
2007	Membership in the local Backup Operators group, or Membership in the local Administrators group. http://technet.microsoft.com/en-us/library/bb123693(EXCHG.80).aspx	Membership in Exchange Recipient Administrator role on the server that holds the target mailbox. http://technet.microsoft.com/en-us/library/aa997694(EXCHG.80).aspx	Membership in Exchange Organization Administrators group (required for storage group creation). http://technet.microsoft.com/en-us/library/bb310792(EXCHG.80).aspx	Membership in Exchange Recipient Administrator role on the server that holds the target mailbox. http://technet.microsoft.com/en-us/library/aa997694(EXCHG.80).aspx
2010	Membership in Organization Management role group. http://technet.microsoft.com/en-us/library/dd876854.aspx	Membership in Organization Management and Server Management role groups. http://technet.microsoft.com/en-us/library/dd638132.aspx	Membership in Organization Management role group. http://technet.microsoft.com/en-us/library/dd876854.aspx	Membership in Organization Management and Server Management role groups. http://technet.microsoft.com/en-us/library/dd638132.aspx

3.6 Supported operations with database and mailbox backups

This section describes how the standard Acronis Backup & Recovery 11.5 operations are supported for database and mailbox backups.

Functionality	Database backup	Mailbox backup
Backup		
Simplified naming of backup files	N/A	N/A

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Custom backup scheme > Retention rules > Advanced Settings	There is no option to consolidate an Exchange backup to be moved or deleted that has dependencies. For more information, see the Custom scheme (p. 25) section.	N/A
Operations with backups in vaults		
Exporting backups	Backups that have no dependencies are exported without any limitations. When exporting a transaction log backup, the data from the backup chain (a full database backup and its dependent transaction log backups up to the selected one) is copied to a single backup. Transaction log files will be applied to the database during recovery.	Backups that have no dependencies are exported without any limitations. When exporting an incremental mailbox backup, the data from the backup chain (a full mailbox backup and all of its incremental backups up to the selected one) is consolidated into a single backup.
Converting a backup to full	N/A	N/A
Deleting backups	Backups that have no dependencies are deleted without any limitations. A backup that has dependencies cannot be deleted separately from all its dependent backups. To delete a backup with dependencies manually, you should delete the entire backup chain (a full backup and all its dependent transaction log backups or incremental backups). If you set the retention rules to delete backups older than the specified age, the outdated backup (marked with the icon) will be kept until all backups that depend on it also become outdated. Then, all the chain will be deleted at once.	

3.7 Supported operations with legacy archives and backups

Acronis Backup & Recovery 11.5 supports archives and backups created with Acronis Recovery for Microsoft Exchange. The table below shows which actions are available for legacy archives and backups.

Operation	Support
Database recovery (recovery of information store, storage groups, and databases)	
Recovery point: Date and time of backup creation	Yes
Recovery point: Point of failure	No
Recovery point: Custom point in time	No
Destination: Original path	Yes
Destination: A custom path within Microsoft Exchange Server	Yes

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Destination: A custom folder on a file system	Yes
Mailbox recovery (mailboxes, public folders, e-mails, calendar items, etc)	
Destination: Recover to Microsoft Exchange Server	Yes
Destination: Recover to a .pst file	Yes
Other operations	
Back up to an existing archive	No
Browsing the backup contents tree down to individual e-mails	Yes
Cataloging	No
In-archive search	Yes
Exporting backups from archives	Yes
Deleting individual backups from archives	No
Deleting archives	Yes

You cannot view the contents of or recover data from the backups created by Acronis Recovery for Microsoft Exchange, if the backups are located on tapes. To recover data from an old backup, export this backup from tapes to another vault.

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4 Getting started with Agent for Exchange

This section lets you quickly implement the most common backup and recovery scenarios for stand-alone Exchange servers as well as for Exchange cluster environments.

4.1 Simple scenario - a single Exchange server

The following steps will guide you through the installation and basic use of Acronis Backup & Recovery 11.5 in simple Exchange organizations.

Let's assume you have a single Exchange server that hosts all Exchange services and stores all Exchange data. Considering the typical size of the server data, the frequency and the amount of the typical data changes, a reasonable backup strategy for such a server is a nightly full backup and an hourly transaction log backup.

Prerequisites

Make sure that:

- You have a machine running one of the supported Microsoft Exchange Server versions (p. 7).
- You have an Acronis Backup & Recovery 11.5 for Microsoft Exchange Server license.
- You downloaded the setup program for stand-alone editions of Acronis Backup & Recovery 11.5.
- The Exchange writer for VSS is turned on. In Windows Small Business Server 2003, the writer is turned off by default. For instructions on how to turn it on, see the following Microsoft Knowledge Base article http://support.microsoft.com/kb/838183/.

Installation

In this step, you will install Agent for Exchange and the management console on the machine running the Exchange server.

1. Log on to the machine as a domain administrator and start the setup program.
2. Click **Install Acronis Backup & Recovery 11.5**. Accept the terms of the license agreement.
3. Click **Add licenses** and type in your license key or import it from a file.
4. Specify the folder where the product will be installed.
5. Specify credentials for the account under which the Agent for Exchange service will run. By default, the setup program will create a dedicated user account for the service.
6. Choose whether the machine will participate in the Acronis Customer Experience Program (CEP).
7. Proceed with the installation.

Running Acronis Backup & Recovery 11.5

To start the management console, either double-click the **Acronis Backup & Recovery 11.5** icon on the desktop, or select from the **Start** menu: **Acronis** > **Acronis Backup & Recovery 11.5 Management Console** > **Acronis Backup & Recovery 11.5**.

Backup

In this step, you will set nightly full backups and hourly transaction log backups of the entire information store.

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1. Make sure that circular logging is disabled for all databases or storage groups of the Exchange server. Otherwise, the transaction log backup will fail.
2. In the management console, click **Create backup plan**.
3. Under **What to back up** section, click **Items to back up**. In **Data to back up**, select **Microsoft Exchange Information Store**. In the data tree, expand the machine and select the **Microsoft Exchange Information Store** check box under the machine's name. Then, click **OK**.
4. Under **Where to back up** section, click **Location**, and specify the location where the backups will be stored.
5. Under **How to back up** section:
   a. In **Backup scheme**, select **Custom**.
   b. In **Full backup**, click **Add schedule**. Select **Daily** and set up the schedule as follows: Every: **1** day(s), Once at: **09:00:00 PM**.
   c. In **Transaction log**, click **Add schedule**. Select **Daily** and set up the schedule as follows: Every: **1** day(s), Every: **1** Hour(s).
6. Click **OK** to save the backup plan.

   Details. You will see the **Backup plans and tasks** view with the backup plan you have just created. In this view, you can check the backup plan's status, monitor its execution state, run or stop the plan, and more.

Recovery

In this step, you will recover a mailbox to the original mailbox database. To recover an entire database or storage group, use the procedure described in the advanced scenario (p. 13) (see under "Recovery", starting from step 2).

1. In the **Navigation** tree, expand **Vaults** > **Personal** and then select the folder where you saved the archives. If prompted, provide access credentials for the vault.
2. On the **Data view** tab, select **Microsoft Exchange Mailboxes** in the **Show** list.
3. In the catalog tree, select the mailbox that you need to recover. Under **Versions**, select the date and time of backup creation. The mailbox will be recovered to this point.
4. Click **Recover**.
5. Under **Where to recover**, in **Data paths**, select **Microsoft Exchange Server**.
6. Choose what to do if the software finds in the original path the mailbox items with the same IDs as in the backup:
   - **Overwrite existing items** - this is the default setting that fits most situations.
   - **Do not overwrite existing items** - this setting will let you retain the changes made to the items after the backup had been created.
7. Click **OK** to start the recovery.

   Details. You will see the window with the recovery activity progress and details.

4.2 Advanced scenario - CDP of an Exchange cluster

This section gives an example of how to use Acronis Backup & Recovery 11.5 in large Exchange organizations where multiple Exchange servers are integrated into a cluster.

Let's see how to get the most out of Acronis Backup & Recovery 11.5 advanced features such as: Continuous Data Protection (CDP), Express full backup method and data deduplication. The express

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full backup method and data deduplication require the "Express backup and deduplication" add-on (purchased separately).

- To be able to revert Exchange data to any custom point in time, we will use the CDP backup scheme (p. 23). In this scheme, you specify when to perform full backups. In addition, the transaction log files are backed up automatically as soon as they are closed by Exchange. In our case, assume full backups will be performed every night.
- To create full backups faster and for them to occupy much less space, we will do full backups to a deduplicating vault by using the express full backup method (p. 26). With this method, Acronis Backup & Recovery 11.5 backs up only the changes that have occurred since the previous full backup. Since the unchanged data is already stored in the deduplicating vault, the software only adds a reference to the unchanged data.
- To relieve the production server from the load associated with backup operations, we will configure Acronis Backup & Recovery 11.5 to back up the cluster data from any of its passive database copies. If none of the passive copies are available at the moment, we allow the software to back up the active database copy.

As for recovery, let's consider a case, where you need to quickly recover a lost or corrupted Exchange database to the state that it was just before the failure. To allow users to access their e-mails while the Exchange database is still being recovered, we will use Acronis Active Restore (p. 40).

4.2.1 Prerequisites

Make sure that:

- You have machines running the supported versions of Microsoft Exchange Server (p. 7).
- You have one of the supported Exchange cluster configurations (p. 47).
- You have an Acronis Backup & Recovery 11.5 for Microsoft Exchange Server license for each node of the cluster.
- The Exchange writer for VSS is turned on.
- You have the Express backup and deduplication add-on.
- You downloaded the setup program for the advanced editions of Acronis Backup & Recovery 11.5.
- You have a machine running Windows that will act as the management server. The management server enables configuring of Exchange cluster backup.
- You have a machine running Windows that will act as the storage node. The storage node serves as storage for backups of other machines and enables deduplication. Make sure this machine meets the system requirements described in the installation documentation.

4.2.2 Installation

1. Install the management server.
   a. On the machine that will act as the management server, log on as an administrator and start the setup program.
   b. Click **Install Acronis Backup & Recovery 11.5**. Accept the terms of the license agreement.
   c. Select the **Centrally monitor and configure the backing up of physical and virtual machines** check box.
   d. Type your license keys or import them from a text file.
   e. Proceed with the installation.

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Details. The console will also be installed so that you can control the management server locally.

2. Install Agent for Exchange on each node of the cluster.
   a. Log on to a cluster node as domain administrator and start the setup program.
   b. Click **Install Acronis Backup & Recovery 11.5**. Accept the terms of the license agreement.
   c. Select the **Back up this machine's data** check box, and on the next page make sure that the **Microsoft Exchange Server** check box is selected.
   d. When prompted for licenses, click **Specify**, select the **Use the following license server** check box, and then specify the name or IP address of the machine where you installed the management server.
   e. Click **Register now**. Specify the name or IP address of the machine where you installed the management server. Provide the user name and password of an administrator on that machine.
   f. Specify whether the machine with the Exchange server will participate in the Acronis Customer Experience Program (CEP).
   g. Proceed with the installation.
3. Install the storage node.
   a. On the machine that will act as the storage node, log on as an administrator and start the setup program.
   b. Click **Install Acronis Backup & Recovery 11.5**. Accept the terms of the license agreement.
   c. Select the **Store the backups of other machines on this machine** check box.
   d. Click **Register now**. Specify the name or IP address of the machine where you installed the management server. Provide the user name and password of a user who is a member of the Acronis Centralized Admins group on the management server's machine.
   e. Proceed with the installation.
4. [Optional] Install the console on a machine from which you prefer to operate, if this machine is not the management server.
   a. Run the setup program and click **Install Acronis Backup & Recovery 11.5**.
   b. After accepting the terms of the license agreement, select the **Connect to remote machines** check box.
   c. Follow the on-screen instructions.

4.2.3 Connecting the console to the management server

To connect the console to the management server:

1. Click **Connect to a management server**.
2. Enter the server name or IP address.
3. If prompted for credentials, specify the user name and password. The user has to be a member of the Acronis Remote Users and the Acronis Centralized Admins groups on the server.

4.2.4 Deduplicating vault creation

1. Connect the console to the management server.
2. Click **Storage nodes** in the **Navigation** pane.
3. Select the storage node, then click **Create vault**.
4. In **Name**, type the name of the vault.

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5. In **Deduplication**, select **On**.
6. Click **Path** and then specify the path to the network share where the backups will be stored.
7. Click **Deduplication database** and then specify the path to the deduplication database.

   Details. To get maximum benefit from the deduplication, we recommend that you locate the deduplication database and the vault on separate physical devices. For more recommendations, see the "Deduplication best practices" section of the product help system, or guides for Acronis Backup & Recovery 11.5 Advanced Editions.
8. Click **OK** to create the deduplicating vault.

4.2.5 Backup

1. Connect the console to the management server.
2. Click **Create backup plan**.
3. Under **What to back up**:
   a. Click **Show access credentials, exclusions**. In the **Access credentials**, specify the credentials required to access the source data.

      Details. To access the Exchange cluster data, a domain user account that has administrative privileges on each of the cluster nodes is required.

      When entering the name of an Active Directory user account, be sure to also specify the domain name (DOMAIN\Username or Username@domain).
   b. Click **Items to back up**. In **data to back up**, select **Exchange information store**. In the catalog tree, select the Exchange cluster. In the data tree, expand the cluster and select the **Exchange information store** check box under the cluster's name. The cluster databases or storage groups are displayed as single instances regardless of the number of copies they have within the cluster.
4. Under **Where to back up**, select the deduplicating vault created previously.
5. Under **How to back up**:
   a. In **Backup scheme**, choose **Continuous Data Protection (CDP).**
   b. In **Schedule**, select **Daily** and set up the schedule as follows: Every: **1** day(s), Once at: **11:59:00 PM**.
   c. In **Cluster backup mode**, choose **Passive (replica)** and select to **Back up active** if none of the passive copies are available.

      Note: To back up transaction log files, disable circular logging for all databases or storage groups in Exchange. Otherwise, the backup task will fail.
   d. Click **Show backup type, 2nd location, validation** to access the **Backup type** setting.
   e. In **Backup type**, select **Create full backups using the Express full backup method**.
6. If required, set up the rest of the backup plan settings.
7. Click **OK** to create the backup plan.

   Details. You will see the **Backup plans and tasks** view with the backup plan you have just created. In this view, you can check the backup plan's status, monitor its execution state, run or stop the plan, and more.

4.2.6 Recovery

1. Connect the console to the one of the available cluster nodes.

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2. In the **Navigation** tree, expand **Vaults** > **Centralized** and then select the vault where you saved the backups.
3. In the **Data view** tab, in **Show**, select **Microsoft Exchange Information Store**.
4. In the catalog tree, select the database that you need to recover. Under **Versions**, select **Point of failure**.
5. Click **Recover**.
6. Under **Where to recover** section:
   a. In **Data paths**, select **Original**.
   b. In Mount recovered databases, select **Mount with Active Restore**.
7. Leave the rest of the setting "as is" and click **OK** to start the recovery.

   Details. You will see the window with the recovery activity progress and details.

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5 Backup

This section describes only the steps and settings that are specific for backing up Microsoft Exchange Server data. The whole procedure of backup plan creation and common backup plan settings, such as selecting backup locations, setting up backup replication, retention and validation are described in the "Backup" section of the product help system or guides for Acronis Backup & Recovery 11.5.

Back up now

Use the **Back up now** to do a one-time backup of the Exchange server's data in a few simple steps. The backup process will start immediately after you perform the required steps and click **OK**.

Create backup plan

Create a backup plan, if you need a long-term backup strategy including backup schemes, schedules, timely deleting of backups, or moving them to different locations.

Create a backup plan on a managed machine to back up data of an individual Exchange server.

Create a backup plan on the management server to back up data of the supported Exchange clusters. For more information, see "Backing up and recovering data of Exchange clusters" (p. 47). By backing up individual Exchange servers with backup plans on the management server, you obtain a single point to manage and monitor activities related to data protection.

5.1 How Exchange data is organized

Information store

Microsoft Exchange Server stores its data in a single repository called information store (in Exchange 2003/2007) or Exchange store (in Exchange 2010). The primary components of the information store are storage groups (for Exchange 2003/2007 only) and Exchange databases.

Exchange database

There are two types of Exchange databases.

- A **mailbox database** stores contents of mailboxes. Mailbox content is private to the mailbox user.
- A **public folder database** stores public folders data. Public folder content is shared among multiple users.

Either type database stores the data in the following files:

- **Database file (.edb)**

  Contains message headers, message text, and standard attachments.

  An Exchange 2003/2007 database uses two files: .edb for text data and .stm for MIME data.
- **Transaction log files (.log)**

  Contains the history of changes made to the database. Only after a change has been securely logged, it is then written to the database file. This approach guarantees a reliable recovery of the database in a consistent state in case of a sudden database interruption.

  Each log file is 1024 KB in size. When an active log file is full, Exchange closes it and creates a new log file.
- **Checkpoint file (.chk)**

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Tracks how far Exchange has progressed in writing logged information to the database file.

Storage group

In Exchange 2003/2007, a storage group is a logical container for Exchange databases (p. 56), the associated transaction log (p. 58), checkpoint (p. 56), and other system files. All databases in a storage group share a single log stream. A storage group is the basic unit for backup and recovery.

In Exchange 2010, the notion of a storage group is discontinued. Therefore, you can select individual databases for backup. Each database will be backed up along with the necessary associated files.

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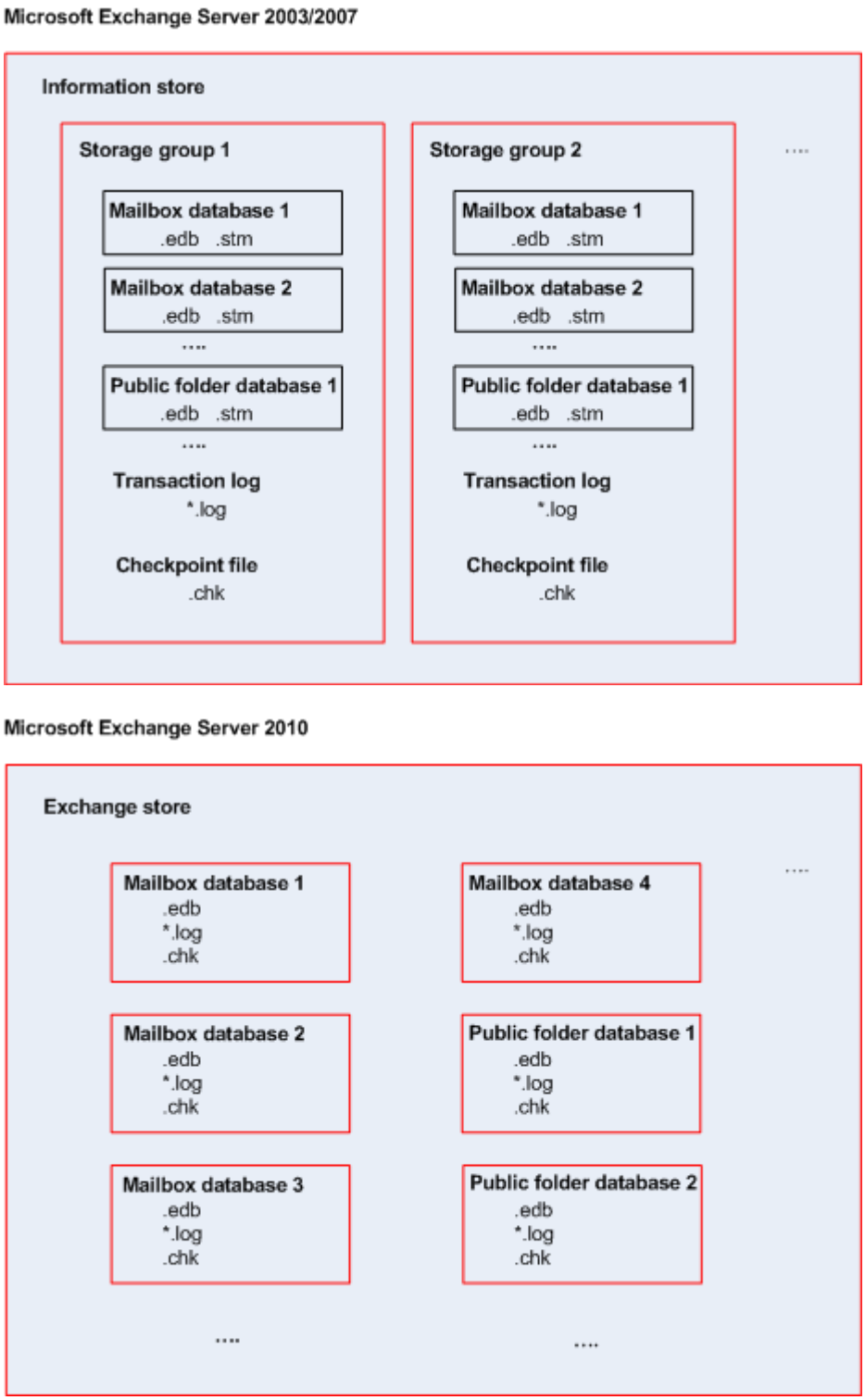
Information store structure diagram

The following diagram illustrates the information store structure for Exchange 2003/2007 and Exchange 2010. The data items that you can back up at the database level are red-framed.



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5.2 What data items can be backed up and what backup types are used?

While creating a backup plan, you can select either the **Microsoft Exchange Information Store** or the **Microsoft Exchange Mailboxes** backup type.

Microsoft Exchange Information store

This data type lets you select the following items to back up:

- The entire information store.
- Individual databases (for Exchange 2010 only).
- Individual storage groups (for Exchange 2003/2007 only).

When you select any of the above mentioned items, the software will perform a *database backup*.

The dismounted databases are skipped during backup. The backup task gets the "Succeeded with warning" result, if the task backed up at least one database but skipped others because they were dismounted. The backup task gets the "Failed" result, if the task was completed but skipped all of the databases because they were all dismounted.

During database backups, Agent for Exchange automatically performs consistency check of database files. It verifies the page-level integrity of the databases being backed up and validates the checksums of all database pages and log files. Databases with a checksum mismatch or file header damage are skipped during the backup.

Database backup types

- **Full**. A regular full database backup stores the selected storage groups or databases along with transaction log files and Exchange-related information from Active Directory. After a full backup is created, transaction log files are truncated (p. 58). A full backup is self-sufficient; that is, you do not need access to any other backup to recover the data from a full backup. The database backups are the basis for disaster recovery scenarios when it is necessary to recover lost or corrupted databases, storage groups, or entire information store. Granular recovery from database backups allows for restoring mailboxes, public folders, e-mails, contacts, calendar events, journal entries, notes and more.

  Additionally, full backups can be created by using one of the following methods:

  - Express full backup (p. 26). This method allows creating creating full database backups in deduplicating vaults. Although regular data deduplication can be used full database backups, we recommend using the Express full backup method to achieve maximum deduplication effect.
  - Copy-only backup (p. 30). This method allows creating full database backups without truncating the transaction log files.
- **Transaction log**. A transaction log backup stores the transaction log files along with checkpoint files and other files required for recovery. After a backup is created, transaction log files are truncated. At first, a regular full backup is created. By having full and transaction log backups, you can recover the data to a custom point in time. From a recovery perspective, transaction log backups are similar to incremental backups. To recover from a transaction log backup, each transaction log backup since the last full backup and the full backup is required. A long chain of transaction log files may significantly increase recovery time.

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Note: *To back up transaction log files, disable circular logging in Exchange. When circular logging is enabled, Exchange overwrites the first log file after its data has been written to the database. This in turn, breaks the transaction log chain preventing Acronis Backup & Recovery 11.5 from doing transaction log backups. If you enable circular logging after a backup plan creation, the backups will fail.*

Microsoft Exchange mailboxes

This data type lets you to select the following items to back up:

- All mailboxes, individual mailboxes or mailbox folders.
- All public folders or individual public folders.

When you select any of the above mentioned items, the software will perform a *mailbox backup*. The mailbox backup gives you the additional flexibility to back up the selected mailboxes or public folders without backing up the entire database. By using the exclusion filters, you can specify items to be skipped during mailbox backups.

Unlike full database backups, mailbox backups cannot be deduplicated.

Mailbox backup types

- **Full backup**. A full mailbox–level backup stores the contents and folder structure of the mailboxes or public folders selected for backup.
- **Incremental backup**. An incremental mailbox backup stores changes to the data against the last backup. At first, a full mailbox backup is created. You need to access other backups from the same archive to recover data from an incremental backup.

5.3 Backup schemes

When backing up data of Microsoft Exchange server, the following backup schemes are available:

Backup schemes	Description	Database backup types	Mailbox backup type
Simple (p. 23)	Protects the Exchange data with full backups performed automatically on a schedule you specify.	Regular full - Express full (p. 26)	Full
Manual start (p. 24)	Save a backup plan now to be able to start it manually at any time afterwards.	Regular full - Express full (p. 26) - Copy-only (p. 30) Transaction log	Full Incremental
Continuous Data Protection (CDP) (p. 23)	The CDP scheme allows recovering the protected data to any point in time. In this scheme, transaction log files are backed up automatically as soon as they are closed by Exchange. You just need to specify when to perform full database backups.	Regular full - Express full (p. 26)	N/A
Custom (p. 25)	Customize your backup strategy the way your need it most. Specify multiple schedules for different backup types, and set up the retention rules.	Regular full - Express full (p. 26) Transaction log	Full Incremental

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5.3.1 Simple scheme

With the simple backup scheme, you just schedule when to create full backups. Other steps are optional.

For the description of the common settings for this backup scheme, such as setting up backup schedule, backup replication, retention and validation see the "Backup" section of the product help system or guides for Acronis Backup & Recovery 11.5 Advanced Editions.

The specific setting for this scheme is the **Backup type**, which is accessible by clicking **Show backup type, 2nd location, validation**.

The available backup types depend on the data type (p. 21) selected for backup: Microsoft Exchange Information Store or Microsoft Exchange Mailboxes.

- *Microsoft Exchange Information Store*: For this data type the archive will contain a number of regular full database backups.

  If a deduplicating vault is selected as a backup destination, full backups can be obtained by backing up only the changes that have occurred since the last full backup. To do this, select the **Create full backups using the Express full backup method** check box. For more information on express backups, see "Express full backup method" (p. 26).
- *Microsoft Exchange Mailboxes:* For this data type the archive will contain a number of full mailbox backups.

5.3.2 Continuous Data Protection (CDP) scheme

Continuous Data Protection (CDP) allows reverting the Exchange data to almost any custom point in time. With the CDP scheme, transaction log files are backed up automatically as soon as they are closed by Exchange. You only specify when to perform full database backups. The transaction log file backup is paused until the full backup is completed.

To set up the CDP backup scheme, specify the appropriate settings as follows.

Schedule

Set up when and how often to perform full database backups. To learn more about setting up the schedule, see the "Scheduling" section of the product help system or guides for Acronis Backup & Recovery 11.5.

Retention rules

[Optional] Specify how long to store backups in the location and whether to move or delete them afterward. The retention rules in this scheme are applied after creating a full backup. The **Keep backup indefinitely** is set by default. This means that no full backups will be deleted automatically. For more information about retention rules, see the "Setting up retention of backups" section of the product help system or guides for Acronis Backup & Recovery 11.5.

Backup type, 2nd location, validation

To access these settings, click **Show backup type, 2nd location, validation**.

Backup type

[Optional] The archive will contain a number of full and transaction log backups.

If a deduplicating vault is selected as a backup destination, full backups can be obtained by backing up only the changes that have occurred since the last full backup. To do this, select the

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Create full backups using the Express full backup method check box. For more information on express backups, see "Express full backup method" (p. 26).

Note: To back up transaction log files, circular logging must be disabled in Exchange. Otherwise, the backup task will fail.

2nd location

[Optional] Specify whether to replicate backups to another location. The replication in this scheme is performed after creating a full backup. Thus, transaction log backups are replicated to another location after the next full backup is created. For more information about backup replication, see the "Setting up replication of backups" section of the product help system or guides for Acronis Backup & Recovery 11.5.

When to validate

[Optional] Define when to perform validation.

Disabling CDP

The CDP scheme is a combination of scheduled full backup activities and always running transaction log backup activity. You may need to temporarily disable CDP when performing database maintenance operations. To do this, navigate to the **Backup plans and tasks** view, select the backup plan that use the CDP scheme, and click **Disable**. Once the maintenance operations are completed, enable the backup plan.

5.3.3 Manual start scheme

With the **Manual start** scheme, the backup will not start automatically. You can run the backup plan from the **Backup plans and tasks** view manually at any time afterwards.

For the description of the common settings for this backup scheme, such as setting up backup replication and validation see the "Backup" section of the product help system or guides for Acronis Backup & Recovery 11.5.

The specific setting for this scheme is the **Backup type**, which is accessible by clicking **Show backup type, 2nd location, validation**.

The available backup types depend on the data type (p. 21) selected for backup: Microsoft Exchange Information Store or Microsoft Exchange Mailboxes.

- *Microsoft Exchange Information Store:* For this data type choose one of the following backup types:
  - **Full.** Selected by default. Creates regular full database backups.

    Optionally, you can choose how to create full backups by using one of the following methods:
    - **Create full backups using the Express full backup method** (available if a deduplicating vault is selected as a backup destination) - creates full backups by backing up only the changes that have occurred since the last full backup. For more information, see "Express full backup method" (p. 26).
    - **Copy-only backup** - creates full database backups without truncating the transaction log files. For more information, see "Copy-only backup" (p. 30).
  - **Transaction log.** Creates transaction log backups. Initially, a regular full database backup is created.

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- *Microsoft Exchange Mailboxes:* For this data type choose one of the following backup types:
  - **Full backup**. Creates full mailbox backups.
  - **Incremental backup**. Creates incremental mailbox backups. Initially, a full mailbox backup is created.

5.3.4 Custom scheme

In the **Custom** backup scheme, you can set up a backup strategy in the way your enterprise needs it most: specify schedules for backups of each type and set up the retention rules.

The available backup types depend on the data type (p. 21) selected for backup: Microsoft Exchange Information Store, or Microsoft Exchange Mailboxes.

Microsoft Exchange Information Store

If you have selected Microsoft Exchange Information Store data type, the following backup types are available:

- **Full backup**

  Specify on what schedule (**Add schedule...**) to perform a full database backup.

  If a deduplicating vault is selected as a backup destination, full backups can be obtained by backing up only the changes that occurred since the last full backup. To do this, select the **Create full backups using the Express full backup method** check box. For more information on express backups, see "Express full backup method" (p. 26).
- **Transaction log**

  Specify on what schedule (**Add schedule...**) to perform a transaction log backup.

  If the archive contains no full backups at the time of the task run, a full backup is created instead of the transaction log backup.

Microsoft Exchange Mailboxes

If you selected Microsoft Exchange Mailboxes data type, the following backup types are available:

- **Full backup**

  Specify on what schedule (**Add schedule...**) to perform a full mailbox backup.
- **Incremental backup**

  Specify on what schedule (**Add schedule...**) to perform an incremental mailbox backup.

  If the archive contains no backups at the time of the task run, a full backup is created instead of the incremental backup.

Clean up archive

Specify how to get rid of old backups: either to apply retention rules regularly or clean up the archive during a backup when the destination location runs out of space.

By default, the retention rules are not specified. This means older backups will not be deleted automatically.

Note, in the **Advanced settings** of the **Retention rules** window for Exchange backups there is no option to consolidate a backup to be moved or deleted that has dependencies. The outdated backup (marked with the icon) will be kept until all backups that depend on it also become outdated. Then, all the chain will be deleted at once during the regular cleanup. If you chose moving outdated

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backups to the next location, the backup will be copied there without delay. Only its deletion from the current location is postponed.

Replication

[Optional] Specify whether to copy backups to another location. For more information about backup replication, see the "Setting up replication of backups" of the product help system or guides for Acronis Backup & Recovery 11.5.

When to validate

[Optional] Define when and how often to perform validation and whether to validate the entire archive or the latest backup in the archive.

5.4 Backup modes

5.4.1 Express full backup method

This feature is used only in advanced editions of Acronis Backup & Recovery 11.5 (p. 6).

Use of the express full backup method requires the "Express backup and deduplication" add-on and the storage node to be installed. The "Express backup and deduplication" add-on is purchased separately. However, you do not need to purchase and install this add-on if Agent for Windows and its deduplication add-on are already installed on your Exchange server.

The express full backup method allows creating full backups of Exchange information stores, storage groups, or databases in deduplicating vaults. With this method, Acronis Backup & Recovery 11.5 backs up only the changes that have occurred since the previous full backup. The data that has not changed is replaced with links to it in a newly created backup.

As compared to regular full database backups:

- The express full backups are created much faster and occupy less space.
- The number of I/O requests to the production server is significantly reduced.

5.4.1.1 How the express full backup method works

The express full backup method is based on monitoring Exchange database files performed by Acronis Express Backup Driver.

Beginning from the first regular full backup, the driver monitors all modifications performed on the database file. The driver determines the offsets and regions of the database file which have been modified by Exchange and stores information about these modifications in the list of changed file regions.

At the next backup, the driver provides the list to the agent and the agent starts to back up only the data corresponding to this list. The agent transfers only the changes and the data that cannot be deduplicated (transaction log files and database page headers). Since the unchanged data is already stored in the deduplicating vault, the agent only adds links to this data. After that, deduplication at target is performed in the same way as for disk-level and file-level backups.

To learn more about how deduplication works, see the "How deduplication works" section of the product help system, or guides for Acronis Backup & Recovery 11.5 Advanced Editions.

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What happens in case of an unexpected system shutdown?

An unexpected system shutdown between the express full backups invalidates information maintained by the Express Backup Driver. At the next backup, Acronis Backup & Recovery 11.5 runs the data re-sync backup operation by comparing the current database files with the most recent backup rather than performing a regular full database backup. Although the re-sync increases the number of I/O requests to the production server, it still saves storage space and network traffic. The next backups after the "re-synced" backup will proceed as regular express full backups.

What if one of the scheduled backups fails?

If one or more of the scheduled express full backups fail, the next successful backup will be a regular express full backup based on differences since the previous successful backup.

What happens when maintenance operations involve rebooting of the Exchange server?

If Exchange server reboot is part of maintenance operations, the next successful backup will be a regular express full backup.

5.4.1.2 Usage examples

This section provides examples of how you can use the express full backup method.

Example 1. Backing up within a narrow backup window

Case: The company's working schedule allows a backup window of only 5 hours per night. The network bandwidth is 60 GB per hour. This effectively limits the amount of data that can be backed up nightly to 300 GB. The Exchange server in the company hosts 500 GB of data making it impossible to finish a full backup within the required time frame. Daily changes, however, almost never exceed 5 GB.

Solution: Do express full backups to a deduplicating vault. Create a backup plan and schedule the backup to start at the beginning of the night backup window. To create the initial full backup, temporarily expand the night backup window. The subsequent express full backups will fit the backup window.

Steps to perform

1. Connect the console to the machine running Agent for Exchange.
2. Click **Create backup plan**.
3. Under **What to back up**, select the required server's data.
4. Under **Where to back up**, select the managed deduplicating vault.
5. Under **How to back up**, select the **Simple** backup scheme.
   - In **Schedule**, select **Daily** and schedule backup to run at the beginning of the night backup window.
   - Click **Show backup type, 2nd location, validation** to access the **Backup type** setting.
   - In **Backup type**, choose **Full** and select **Create full backups using the Express full backup method**.
6. For information about specifying the rest of backup plan settings (replication, retention, and validation of backups), refer to the "Backup" section of the product help system or guides for Acronis Backup & Recovery 11.5 Advanced Editions.

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7. Click **OK** to save the created backup plan.

Example 2. Backing up to a remote location through a low-bandwidth network connection

Case: The company's branch office has a dedicated Exchange mailbox server that hosts 500 GB of data. The network bandwidth available between offices allows transferring about 5 GB per hour. Thus, it requires about 100 hours to back up the Exchange mailbox databases over the network. The amount of daily changes on this server almost never exceeds 5 GB.

Solution: Use the express full backup method to do full backups of the Exchange server without transferring the entire database over the network. Since the initial backup is still required, export the backup to a detachable medium such as a USB hard drive and ship it to the main office. In the office, export the backup to the deduplicating vault. Then, set up the backup plan to use the deduplicating vault as a backup destination for the subsequent express full backups.

Steps to perform

The initial full backup in the branch office

1. Connect the console to the machine running Agent for Exchange.
2. Click **Create backup plan** and specify the settings as follows:
   a. Under **What to back up**, select the required server's data.
   b. Under **Where to back up**:
      - Specify a vault that will store the data.
      - In the **Name** field, add the *[Machine Name]* variable before the archive name. The whole archive name should look like *[Machine Name]_Archive(N)*, where the *[Machine Name]* stands for the machine's name, and *N* is a sequence number.
   c. Under **How to back up**, select **Manual start**.
      - Click **Show backup type, 2nd location, validation** to access the **Backup type** setting.
      - In **Backup type**, choose **Full**.
3. Click **OK** to create the backup plan.
4. You will see the **Backup plans and tasks** view with the backup plan you have just created. Select this backup plan and click **Run**.

Exporting the initial backup to a detachable medium

1. After the backup is created, navigate to the vault containing the backup.
2. In the vault view, click the **Archive view** tab and select the created backup.
3. Click **Export**.
4. On the **Export** page, under **Where to export**, specify the path to the USB hard drive.
5. Click **OK** to export the backup.
6. Once the export is completed, ship the drive to the main office.

Exporting the backup to a remote location

1. In the main office, attach the drive to the machine running the Agent for Exchange.
2. Connect the console to this machine.
3. In the **Actions** menu, select **Export backup**.
4. Under **What to export**, select the archive on the attached drive.
5. Under **Where to export**, select the deduplicating vault.

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6. Click **OK** to export the backup.

Scheduling the express full backups

1. Connect the console to the machine running Agent for Exchange in the branch office.
2. Click **Create a backup plan**.
3. Under **What to back up**, select the same data as when creating the initial full backup.
4. Under **Where to back up**:
   - Select the managed vault containing the exported archive.
   - In the **Name** field, enter the following: *[Application Instance Name]_Archive(N),* replacing *N* with the same number as in the exported backup. For example, if the exported backup name is *machine1.corp.com_Archive(1)*, the sequence number you should specify in the parentheses must be the same: *[Application Instance Name]_Archive(1)*.
5. Under **How to back up**, select **Simple** backup scheme.
   - In **Schedule**, select **Daily** and specify the daily backup schedule.
   - Click **Show backup type, 2nd location, validation** to access the **Backup type** setting.
   - In **Backup type**, select **Create full backups using the Express full backup method**.
6. For information about specifying the rest of the backup plan settings (replication, retention, and validation of backups), refer to the "Backup" section of the product help system or guides for Acronis Backup & Recovery 11.5 Advanced Editions.
7. Click **OK** to save the created backup plan.

Example 3. Minimizing storage space taken by full backups

Case: The company's backup strategy requires creating daily full backups of the Exchange server database hosting 1 TB of data. Each backup has to be retained for 8 weeks. Thus, having 56 full backups requires about 56 TB of storage space. The average amount of daily changes on the server is about 30 GB.

Solution: Do express full backups to a deduplicating vault. The storage space savings will be about 52 TB or about 92%.

Steps to perform

1. Connect the console to the machine running Agent for Exchange.
2. Click **Create backup plan**.
3. Under **What to back up**, select the required Exchange databases or storage groups.
4. Under **Where to back up**, select the managed deduplicating vault.
5. Under **How to back up**, select the **Simple** backup scheme.
   a. In **Schedule**, select **Daily** and schedule the required time of backup start.
   b. Click **Show backup type, 2nd location, validation** to access the **Backup type** setting.
   c. In **Backup type**, choose **Full** and select **Create full backups using the Express full backup method**.
6. For information about specifying the rest of backup plan settings (replication, retention, and validation of backups), refer to the "Backup" section of the product help system or guides for Acronis Backup & Recovery 11.5 Advanced Editions.
7. Click **OK** to save the created backup plan.

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5.4.2 Copy-only backup

The copy-only backup method allows creating full database backups without truncating the transaction log files. This way, full backups are created without interrupting other continuous backup plans. The copy-only backups can be easily stored off-site for testing, analysis or other purposes.

The copy-only backups can be created with the Manual start (p. 24) backup scheme only.

Usage example. Obtaining a full backup of the Exchange database without disturbing continuous backup plans

Case: The Exchange database in the organization is currently protected by the backup plan that uses the CDP (p. 23) scheme. The administrator was asked to provide an up-to-date backup of the database for analysis purposes.

Solution: If the administrator sets up a backup plan that only creates a regular full backup, it will truncate the transaction log files and interrupt the backup chain of the existing CDP backup scheme. To avoid such interferences, the administrator creates a backup plan with the following settings:

1. Under **What to back up**, select the required database or storage group.
2. Under **Where to back up**, select the backup destination.
3. Under **How to back up**:
   a. In **Backup scheme**, select **Manual start**.
   b. Click **Show backup type, 2nd location, validation** to access the **Backup type** setting.
   c. In **Backup type**, select **Full** and then select the **Copy-only backup** check box.
4. Leave the rest of the backup plan settings "as is" and click **OK** to create the backup plan.
5. You will see the **Backup plans and tasks** view with the backup plan you have just created. Select this backup plan and click **Run**.

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6 Recovery

This section describes only the steps and settings that are specific for recovering Microsoft Exchange Server data. The whole procedure of recovery task creation and common recovery task settings are described in the "Creating a recovery task" section of the product help system or guides for Acronis Backup & Recovery 11.5.

6.1 What data items can be recovered?

The following items can be recovered from database backups:

- Storage groups (for Exchange 2003/2007)
- Databases (for Exchange 2010)
- Mailboxes
- Public folders
- Public folder items
- E-mails
- E-mail folders
- Calendar events
- Tasks
- Contacts
- Notes
- Journal entries.

The following items can be recovered from mailbox backups:

- Mailboxes
- Public folders
- Public folder items
- E-mails
- E-mail folders
- Calendar events
- Tasks
- Contacts
- Notes
- Journal entries.

6.2 Selecting data to recover

1. Specifying the archive location

Choose either to specify the archive location in the **Data path** field, or select data using the centralized data catalog.

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2. Selecting the data

The backed up data can be selected using the **Data view** tab, or the **Archive view** tab. The **Data view** tab displays all the backed up data by versions (the date and time of backup creation) within the selected archive location. The **Archive view** tab displays the backed up data by the archives.

6.2.1 Selecting the Exchange data by using the Data view or Data catalog

The **Data view** tab on the managed machine or the **Data catalog** view on the management server lets you browse and select the backed up data by versions (backup date and time).

Selecting the backed up data for recovery

The steps required for browsing and selecting the Exchange data for recovery in the Catalog or Data view are pretty much the same as for disks and files, with exception of steps 2, 4 and 5:

1. Do any of the following:
   - To access the **Data view** tab, connect the console to a machine or to the management server, navigate to **Vaults** view, and click the required vault.
   - To access the **Data catalog**, connect the console to the management server and select **Data catalog** in the **Navigation** tree.
2. In the **Show** field, select the type of Exchange data to display:
   - **Exchange information store** to browse and search for information stores, individual storage groups or databases in the database-level backups.
   - **Exchange mailboxes** to browse and search for entire mailboxes, public folders, individual folders, e-mails, calendar events, tasks, contacts, notes both in the database-level and mailbox-level backups.
3. In the **Display data backed up for** field, specify the time period for which the backed up data will be displayed.
4. Do any of the following:
   - Select the data to recover in the catalog tree, or in the table to the right of the catalog tree.
   - In the search string, type the information that helps to identify the required data items and then click **Search**. You can use the asterisks (*) and question marks (?) wildcards.
     - If the **Exchange information store** is selected in the step 2, the search is performed on information stores, databases, or storage groups.
     - If the **Exchange mailboxes** is selected in the step 2, you can search in the mailboxes and public folders for individual e-mails, contacts, calendar items, and other contents.

     As a result, in the **Search** window, you will see the list of backed up data items whose names fully or partially coincide with the entered value. If the list of matches is too long, you can refine the search criteria by narrowing down the date range and running the search once again. When the required data is found, select it and click **OK** to return to the **Data catalog/Data view**.
5. In the **Versions** list, select the point in time to recover the data to:
   - **Recover to the point of failure** (available for the database backups only). The data will be recovered to the state of the most recent transaction log file, existing in Exchange. If transaction logs are not available (lost, deleted or corrupted), the data will be recovered to the moment of backup creation.

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- Select the recovery point by the date and time of backup creation. The data will be recovered to this time.
- **Custom point in time** (available for the database backups only). Specify the date and time to recover the data to. During recovery the software will first recover data to the time of the last created full backup before the specified time and then apply the transaction log files from the transaction log backups. See the "Point in time selection" (p. 34) section for details.

6. Having selected the required data, click **Recover** and configure the parameters of the recovery operation.

For information about what to do if the data does not appear in the catalog or data view, refer to the "Data catalog" section of the product help system or guides for Acronis Backup & Recovery 11.5.

6.2.2 Selecting the Exchange data by using the Archive view

1. In the **Show** list, select the required archive type: **Exchange information store** or **Exchange mailboxes**.
2. In the list of archives, click the required archive and select to which state to recover the data:
   - **Recover from the selected backup** (selected by default), expand the archive and select one of the successive backups by its creation date and time. The data will be recovered to the time of backup creation.
   - **Recover to the point of failure** (available for the database backups only) - the data will be recovered to the state of the most recent record in the most recent transaction log file, if it exists in the Exchange. If transaction logs are not available in the original location (lost, deleted or corrupted), the data will be recovered to the moment of backup creation.
   - **Recover to a custom point in time** (available for the database backups only) - specify the date and time to recover the data to. During recovery the software will first recover data to the time of the last created full backup before the specified time and then apply the transaction log files from the transaction log backups. See the "Point in time selection" (p. 34) section for details.
3. For the database–level archives only: in **Backup contents**, specify the data items to display in the backup contents tree.
   - **Information store** - to recover entire information store, or individual databases, or storage groups.
   - **Mailboxes** - to recover entire mailboxes, public folders, individual folders, e-mails, calendar events, tasks, contacts, etc.
4. In the backup contents tree, select the check boxes for the items you need to recover.

   Use search to find the specific items (such as e-mails, notes, contacts, tasks, etc.) within the selected mailbox or public folder and select them for recovery. To do this, click **Search** and proceed as described in the "Searching for specific items in mailboxes and public folders" (p. 34) section.

   ***Note**: Browsing the backup contents tree down to individual e-mails and to other items is performed by using the meta data that is collected at the backup. The level of detail for collecting metadata is set in the **Metadata collection** (p. 54) option. If the most detailed level is not set, in order to browse individual e-mails, Acronis Backup & Recovery 11.5 has to open the respective database and apply transaction logs directly from the backup. The process of opening the database may take considerable time depending on the number of transaction logs to apply. The amount of time depends on the number of transaction log files in the backup. The opened database will be closed automatically after 10 minute idle or when you start browsing the contents of another backup.*

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5. Click **OK**.

6.2.3 Searching for specific items in mailboxes and public folders

The search allows you to find specific items (such as e-mails, notes, contacts, tasks, and more) within the selected mailbox or public folder for recovery. The search is performed within the item selected in the backup contents tree (for the Archive view (p. 33)). To make the search faster, you can narrow the selection going deeper to the tree (such as particular mailbox or folder rather than entire database).

1. In the **Search in**, select the required items to search:
   - E-mails
   - Contacts
   - Public folder items
   - Notes
   - Calendar items
   - Tasks
   - Journal entries
2. In the search strings, type the information that helps to identify the required items (for e-mails, it can be an e-mail address in **To** or **From** fields). You can use the asterisks (*) and question marks (?) wildcards.
3. Click **Search**.
4. Then, in the **Search results**, you will see the list of found backed up items whose names fully or partially coincide with the entered values. If the list of matches is too long, you can refine the search criteria by narrowing down the date range and run the search once again.
5. When the required data is found, select it and click **OK** to return to the **Archive view**.

6.2.4 Point in time selection

In the **Point in time selection** window, you specify the point in time to recover the data to. This window is displayed, when you click **Custom point in time** on the Data view (p. 32) tab, or click **Recover to a custom point in time** on the Archive view (p. 33) tab.

To select a point in time to recover the data to

1. In the calendar, select the date that is covered by full or transaction log backups. Such dates are marked in **bold**.
2. In **Transaction log coverage**, select the time range that includes the time you need to recover the data to.

   Selecting the zero length time range means that the data will be recovered from the full backup.

   Selecting the time range in the list means that the data will be recovered from transaction log backup.
3. The **Recover to** field automatically sets the time according to the time range selected previously. If you are satisfied with the suggested time, click **OK**.

   Otherwise, specify the desired point in time to recover the data to. Acronis Backup & Recovery 11.5 automatically finds the transaction log file (in the transaction log backups) which includes the specified point in time, and recovers the data to the time of this transaction log file creation. If there are no log files that include the specified time, Acronis Backup & Recovery 11.5 will offer the nearest point from the transaction log file backed up before the specified time.

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6.3 Selecting target destinations for databases or storage groups

When creating a recovery task on the management server, you can select the Exchange Server to recover the selected data to. To do this, click **Browse** and select the required Exchange server with the Agent for Exchange installed.

In the **Data paths** drop-down box, select one the following data paths:

- **Original** (p. 35) - recover the databases or storage groups to their original paths (the paths are taken from the backup).
- **Custom** (p. 35) - recover the databases or storage groups as new, over the existing ones, or as recovery databases or recovery storage groups.
- **Specified folder** (p. 36) - extract the database or storage group files to a folder you specify.

6.3.1 Recovering storage groups or databases to the original path

The original path for a database or a storage group means the path taken from the backup.

If the same databases or storage groups exist in the original paths, they will be overwritten (if the overwriting is allowed in the properties of the selected databases). The paths to the existing databases or storage group cannot be changed.

If the database being recovered does not exist in the original path, you can change the default path taken from the backup by clicking the database name. In Exchange 2010, you can also change the path to the transaction log files. As soon as you change any of the default settings, the **Original** switches to the **Custom**. If you switch back to the **Original**, the customized mapping for databases or storage groups will be reverted to the default one.

To mount the databases after recovery, in **Mount recovered databases** select either **Mount** or **Mount with Active Restore**. In the latter case, the databases will be recovered using the Acronis Active Restore (p. 40) technology allowing users to access their e-mails while the Exchange databases are still being recovered.

For information about the original paths for Exchange clusters, see the "Recovering data to the Exchange cluster" (p. 51) section.

6.3.2 Recovering storage groups or databases to a custom path

Specify where to recover the selected databases or storage groups.

***Note**: Since Microsoft Exchange Server has its own versioning limitations, Acronis Backup & Recovery 11.5 will inform you about any possible mismatch of Exchange server versions when you recover databases or storage groups to a different version of Exchange server. This alert will not prevent you from doing the recovery, but the recovery will fail if the Microsoft Exchange Server cannot identify the database or storage being recovered.*

To recover the selected databases (storage groups) to a new databases (storage groups)

1. To the right of the **Recover <database or storage group name> to**, select **Create new**.
2. Click **Name...** and specify the unique name for the database/storage group.
3. In **Database path**, specify path to the new database.
4. In **Log path**, specify where to store the recovered transaction log files.
5. Repeat steps 1-4 for other databases or storage groups that you need to recover as new.

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To recover the selected databases (storage groups) over the existing ones

1. To the right of the **Recover <database or storage group name> to**, select one of the existing databases (storage groups). The existing database (storage group) will be overwritten (if the overwriting is allowed in the properties of the selected databases).
2. Repeat step 1 for other databases or storage groups that you need to recover over the existing ones.

To recover the selected database (storage group) as a recovery database (recovery storage group)

1. To the right of the **Recover <database or storage group name> to**, select **Recovery database**, or **Recovery storage group**. Only one database or storage group can be recovered as a recovery database or as a recovery storage group.
2. In **Database path**, specify the database location.
3. In **Log path**, specify where to store the recovered transaction log files. In Exchange 2003/2007 you have to specify path to the log files only if the destination recovery storage group does not exist.

A recovery database (recovery storage group) is a special administrative database (storage group) in Exchange server. It lets you mount a mailbox database and extract data from it. The extracted data can be copied or merged to the existing mailboxes without disturbing user access to the current data.

Note for public folder databases: *A public folder database cannot be recovered as a recovery database (in Exchange 2010) and cannot be recovered to a recovery storage group (in Exchange 2003, 2007). When recovering a storage group containing a public folder database, this database is skipped during recovery. If a storage group being recovered contains a public folder database only, the recovery task will fail.*

Note for Exchange 2003, 2007: *The existing recovery storage group will be overwritten. Databases that currently do not exist on the server cannot be recovered to a recovery storage group. When recovering a storage group containing non-existent databases, such databases are skipped during recovery. If a storage group being recovered does not contain any databases which currently exist on the server, the recovery task will fail.*

Mounting the recovered databases

To mount the databases after recovery, in **Mount recovered databases** select either **Mount** or **Mount with Active Restore**. In the latter case, the databases will be recovered using the Acronis Active Restore (p. 40) technology allowing users to access their e-mails while the Exchange databases are still being recovered.

Mounting a recovery database in Exchange 2010: *When you recover the selected database as a recovery database and choose* ***Mount*** *or* ***Mount with Active Restore****, the database will be mounted automatically only if there is no other recovery database that is currently mounted on the server. We recommend that you manually unmount the existing mounted recovery database before recovery. Otherwise, you need to unmount the existing recovery database and mount a newly recovered database after recovery.*

6.3.3 Recovering databases or storage groups to the specified folder

Recovering databases or storage groups to the specified folder means that the database files along with transaction log files are extracted from the backup to a folder you specify. This can be useful if you need to extract data for audit or further processing by third party tools; or when the recovery fails for some reason and you are looking for a workaround to mount the databases manually.

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To recover the databases or storage groups to a folder

In **Path**, specify the destination folder where files of the selected database or storage group will be saved. The storage group or database files will be extracted from the backup along with transaction log files.

The extracted databases will be in a Dirty Shutdown state. When recovering databases to their original location, the databases can remain in a Dirty Shutdown state and be mountable by the system. When recovering to an alternate location, databases cannot be mounted until you bring them to a Clean Shutdown state by using the **Eseutil /r <Enn>** command. **<Enn>** specifies the log file prefix for the database (or storage group that contains the database) into which you need to apply the transaction log files. For instructions on how to do this, refer to:

- http://technet.microsoft.com/en-us/library/dd876926.aspx
- http://technet.microsoft.com/en-us/library/aa998340(EXCHG.80).aspx

6.4 Selecting target destinations for mailboxes, public folders, or their contents

When creating a recovery task on the management server, you can select the Exchange Server where the selected data will be recovered. To do this, click **Browse** and select the required Exchange server with the Agent for Exchange installed.

In the **Data paths** drop-down box, select one the following data paths:

- **Microsoft Exchange Server** (p. 37) - recover mailboxes, public folders, or their contents to the original or different mailbox database. Mailboxes (public folders, or their contents) can be recovered only if they have the associated user accounts in the Active Directory.
- **PST file** (p. 38) - save mailboxes, public folders, or their contents to a .pst file.

6.4.1 Recovering mailboxes, public folders, and their contents to the Exchange server

User mailboxes, public folders, and their contents can be recovered only if they have the associated user accounts in the Active Directory, and if these user accounts are enabled. In this case, the recovery task result will be "Succeeded". Mailboxes that have no matching user accounts in the Active Directory are skipped during recovery. If some mailboxes are skipped, the recovery task result will be "Succeeded with warnings". If all mailboxes are skipped, the recovery task result will be "Failed".

If the mailboxes being recovered already exist on the current Exchange server, the recovery will proceed exactly to these mailboxes. The mailboxes that are missing on the current Exchange server, but exist on a different Exchange server within the current Exchange organization will be skipped during recovery. To recover such mailboxes, you should connect the console to the Exchange server hosting these mailboxes and start the mailbox recovery on this server.

If the mailboxes are missing within the current Exchange organization, you should specify the mailbox database where the missing mailboxes will be created (see later in this section).

***Note for resource mailboxes**: Shared, room, and equipment mailboxes can be recovered only if their associated Active Directory user accounts are disabled.*

***Note for system mailboxes**: Discovery and Arbitration mailboxes are skipped during recovery.*

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To set up the mailbox recovery, specify the appropriate settings as follows.

Overwriting

Choose what Acronis Backup & Recovery 11.5 should do if it finds that the target mailbox has items (e-mails, calendar events, contacts, tasks, etc.) with the same ID as those in the backup:

- **Overwrite existing items** - this is the default setting that fits most situations.

  Note: *If you recover the same items more than once, each subsequent recovery duplicates the items because original item IDs will change after the overwriting.*

- **Do not overwrite existing items** - this setting will let you retain the changes made to the items after the backup had been created.

Database to re-create any missing mailboxes

If the mailboxes being recovered are missing within the current Exchange organization, specify the mailbox database (in the current Exchange server) where the new mailboxes will be created. The newly created mailboxes will be properly initialized and recovery will be performed to these mailboxes. Mailboxes will also be re-created when recovering mailbox contents.

Note*: Automatic mailbox re-creation is not supported for Exchange 2003. To recover missing mailboxes in Exchange 2003, re-create them manually and connect to these mailboxes using Outlook. After that, perform the recovery.*

6.4.2 Recovering mailboxes, public folders, and their contents to a .pst file

Personal Storage Table (.pst) files allow storing entire mailboxes and public folders as well as their items (individual e-mails, e-mail folders, contacts, tasks, notes, and other objects supported by Microsoft Outlook and Exchange). The .pst files are easy to move between computers and to import to Microsoft Outlook for further browsing and editing.

When recovering multiple mailboxes or public folders at a time, each of them is recovered to a separate .pst file. The created .pst files retain the folder structure of the original mailboxes or public folders.

The following section provides information that helps you select the appropriate settings.

PST file format

Select one of the following Microsoft Outlook formats:

- **Outlook 97-2002** - if the created .pst files will be opened by using Microsoft Outlook 97-2002.

  Note*: The Outlook 97-2002 format does not support Unicode and limits the file size to 2 GB.*

  Creation of a .pst file in Outlook 97-2002 format does not require a machine with a corresponding version of Microsoft Outlook. The .pst files of that format are created by using native Exchange server mechanisms. However, to be able to create such files with Exchange 2007 or later, Messaging API (MAPI) client libraries and Collaboration Data Objects, version 1.2.1 (CDO 1.2.1) must be installed on the server.

- **Outlook 2003 -2010** - if the created .pst files will be opened by using Microsoft Outlook 2003 or higher.

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***Note**: This format is incompatible with Microsoft Outlook 2002 and earlier versions.*

Since Exchange server does not have the libraries necessary to create .pst files in Outlook 2003-2010 format, Acronis Backup & Recovery 11.5 requires that a machine with Microsoft Outlook 2003 or later be installed. Acronis Backup & Recovery 11.5 uses this machine as a proxy for .pst file creation.

Machine with Outlook 2003 or later

Available if the Outlook 2003-2010 format is selected.

Specify:

- The name or the IP address of the machine where Microsoft Outlook 2003 or later is installed.
- The user name and password of an administrator on that machine.

File and Printer Sharing must be *enabled* on the machine where Microsoft Outlook 2003 or later is installed. To access this option:

- On a machine running Windows Vista, Windows Server 2008, or Windows 7: go to **Control panel > Windows Firewall > Network and Sharing Center > Change advanced sharing settings**.
- On a machine running Windows XP with Service Pack 2 or Windows 2003 Server: go to **Control panel > Windows Firewall > Exceptions > File and Printer Sharing**.

The Remote Registry service must be *enabled* on the machine where Microsoft Outlook 2003 or later is installed. To start the Remote Registry service, type the following command in a command prompt:

```
net start RemoteRegistry
```

Path to .pst file

Specify a destination folder to save the .pst files being created.

When entire mailboxes (or entire mailbox folders) or public folders are selected for recovery, the created .pst files will be named automatically according to the following templates:

- For mailboxes: *Mailbox – {Name of the mailbox owner}*.pst.
- For public folders: *Public Folder – {Public folder name}*.pst.

If such mailbox or public folder already exists in the target destination, the sequential numeric value is added to the end of the file name, for example: *Mailbox – {Name of the mailbox owner}(2)*.pst.

When the mailbox or public folder contents (such as individual e-mails, contacts, tasks, etc.) are selected for recovery, the created .pst file will be named according to the following template: *{Original server name} recovery*.pst. If required, you can change the .pst file name.

Host machine credentials

Available if the Outlook 2003-2010 format is selected.

If you connect the console to the Exchange server (host) with Agent for Exchange remotely, the host machine credentials are filled automatically and you do not have to enter them. If the console is connected to the Exchange server locally, specify the user name and password. The user account has to be a member of the Administrators group on the host. When entering the name of an Active Directory user account, be sure to also specify the domain name (DOMAIN\Username or Username@domain).

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Access credentials

Provide credentials for the destination if the task credentials do not enable recovery of the selected data. When entering the name of an Active Directory user account, be sure to also specify the domain name (DOMAIN\Username or Username@domain).

6.5 Using Acronis Active Restore for database recovery

Acronis Active Restore brings up Microsoft Exchange services online in minutes allowing users to access their e-mails while the Exchange databases or storage groups are still being recovered.

How it works

1. Once the recovery task is started, the Exchange databases are dismounted.
2. The transaction log files, checkpoint files, and other Exchange files required for recovery are copied from the backup to the target destination.
3. The backed up databases are mounted virtually from the archive to the target destination. The file system and the Exchange server treat these virtual databases files as physical ones.
4. The virtual databases are mounted to the Exchange server and transaction logs are applied to the databases. The Exchange server becomes operational and ready to provide services. Users can send and receive e-mails, work with their mailboxes, contacts, calendar and e-mails even though they are not yet recovered.

   The Acronis Active Restore drivers intercept Exchange user queries and set the immediate priority for recovery of the Exchange items that are necessary to serve the incoming requests. While this on-the-fly recovery proceeds, the continuing database recovery process is transferred to the background.
5. The background recovery of physical databases continues until all the selected databases are recovered. After the recovery is completed, the virtual databases are dismounted and the physical databases are mounted to the Exchange server, which takes less than a minute.

6.6 Usage examples

This section provides examples of how you can recover the Exchange data.

6.6.1 Example 1. Recovering mailboxes to .pst files

Typical usage scenarios for recovering mailboxes to a .pst files are:

- **Migrating mailboxes between different Exchange servers**.

  Example: the administrator needs to safely move mailboxes from the existing Exchange organization to a newer Exchange Server version (i.e., from Exchange 2007 to Exchange 2010). The administrator recovers the required mailboxes as .pst files from the database or the mailbox backup. The administrator then imports the mailbox data from the .pst to into the appropriate mailboxes on another Exchange server by using the MailboxImportRequest cmdlet.
- **Accessing mailbox data without mandatory usage of Exchange server.**

  Example: the General Counsel of the company has requested the administrator to provide a copy of the mailbox of a recently resigned employee in order to research a legal case. The General Counsel's laptop and the laptop itself is not in the corporate network. The administrator finds the required version of the employee's mailbox in the previously created backups. Then, the administrator recovers the mailbox as a .pst file on a USB stick and passes this stick to General

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Counsel. The General Counsel simply opens this file by using Microsoft Outlook and sees all of the contents for the required mailbox.

Steps to perform

1. Connect the console to the Exchange server running Agent for Exchange.
2. In the **Navigation** tree, select the vault where the required backups are stored.
3. In the **Data view** tab, in **Show**, select **Microsoft Exchange Mailboxes**.
4. In the catalog tree, select the required mailbox or mailboxes. Under **Versions**, select a point in time to recover the data to.
5. Click **Recover**.
6. Under **Where to recover**:
   - In **Data paths**, select **.PST file**.
   - In **Format**, select **Outlook 2003-2010**.
   - In **Machine with Outlook 2003 or later**, specify:
     - The name or IP address of the machine with Microsoft Outlook 2003 or later installed.
     - The administrative credentials for the machine.
   - In **Path to .PST file**, specify a folder where the .pst file or files will be created.
7. Leave the rest of the settings "as is" and click **OK** to start the recovery task.

Useful links

For instructions on how to import .pst files into Microsoft Outlook, use the following links:

- Outlook 2007/2003/2002: http://support.microsoft.com/kb/287070/en-us.
- Outlook 2010: http://office.microsoft.com/en-us/outlook-help/import-outlook-items-from-an-outlook-data-file-pst-HA102505743.aspx

For instructions on how to import mailbox data from .pst files into Exchange server mailboxes, use the following links:

- Exchange 2010: http://technet.microsoft.com/en-us/library/ee633455.aspx
- Exchange 2007: http://technet.microsoft.com/en-us/library/bb691363(v=exchg.80)
- Exchange 2003: http://www.msexchange.org/tutorials/exmerge-recover-mailbox.html

6.6.2 Example 2. Recovering mailboxes to a different mailbox database

Typical usage scenarios for recovering mailboxes to a different mailbox database are:

- **Migrating mailboxes between different Exchange servers.**

  Example: the administrator needs to safely move mailboxes from the existing Exchange organization to a newer Exchange server version (for example, from Exchange 2007 to Exchange 2010). Having created mailbox backups of the Exchange 2007, the administrator can remove the server. Then, the administrator installs Exchange 2010 on the same hardware and recovers mailboxes from the mailbox backups.

- **Re-hiring employees.**

  Example: the administrator needs to restore a mailbox for an employee who left the company a while ago and was re-hired later. In order to work with his documents, the employee wants his old mailbox. The department where the new employee is going to work uses another mailbox database. Recovery by using the native tools of Exchange is not an option, since Exchange

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retention policies have already been wiped from the mailbox and the employee's user account has already been deleted from the Active Directory. In this case, the administrator picks up the mailbox from one of the backups taken before the employee left and recovers it to the required database.

Note: *Before starting recovery, re-create the required user account and enable it, because mailboxes can be recovered only if they have the associated user accounts in the Active Directory and if these user accounts are enabled.*

Steps to perform

1. Connect the console to the Exchange server running Agent for Exchange.
2. In the **Navigation** tree, select the vault where the required backups are stored.
3. In the **Data view** tab, in **Show**, select **Microsoft Exchange Mailboxes**.
4. In the catalog tree, select the required mailbox or mailboxes. Under **Versions**, select the most recent date and time of backup creation. The mailbox or mailboxes will be recovered to this point.
5. Click **Recover**.
6. Under **Where to recover** section, in **Data paths**, select **Microsoft Exchange Server**.
7. In **Database to re-create any missing mailboxes**, select the database where the mailbox will be created.
8. Leave the rest of the settings "as is" and click **OK** to start the recovery task.

6.6.3 Example 3. Recovering an accidentally deleted e-mail to the original mailbox

Context: The company's CEO accidentally deleted a keynote speech sent to him by e-mail and to be used at an upcoming Board of Director's meeting. To make matters worse, the deleted file was purged from the CEO's **Deleted Items** folder in Outlook because the **Deleted Items** folder was configured to automatically delete its contents when Outlook is closed.

Solution: Since the CEO's mailbox is set to backup hourly by using Acronis Backup & Recovery 11.5, the administrator can easily find the most recent version of the e-mail in backups and recover it to the existing mailbox.

Steps to perform

1. Connect the console to the Exchange server running Agent for Exchange.
2. In the **Navigation** tree, select the vault where the required backups are stored.
3. In the **Data view** tab, in **Show**, select **Microsoft Exchange Mailboxes**.
4. By using the search (p. 34) find the required e-mail and select it for recovery.
5. Under **Where to recover** section in **Data paths**, select **Microsoft Exchange Server**.
6. Leave the rest of the settings "as is" and click **OK** to start the recovery task.

   Result: The CEO runs Outlook and finds the required e-mail in its original location.

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7 Exchange servers on a management server

All administrative operations with Exchange servers in Acronis Backup & Recovery 11.5 are performed in the **Microsoft Exchange Servers** view of the management server.

Add a machine running Exchange to the management server by using the machine's name or IP address, or add multiple machines running the Exchange server application. Once an Exchange server is registered on the management server, it becomes available for monitoring all of the backup and recovery activities and their results. To back up data of an Exchange cluster, add all of the cluster nodes to the management server.

To estimate whether the data is successfully protected on the server, check its status. A server's status is defined as the most severe status of all backup plans (both local and centralized) existing on the server. It can be "OK", "Warning" or "Error".

To take an action on the selected server (cluster), use the toolbar buttons. See the Actions on Exchange servers and clusters section (p. 43) for details.

To review detailed information on the selected server (cluster), use the information panel at the bottom of the window. The content of the panel is also duplicated in the **Details** (p. 45) window.

7.1 Actions on Exchange servers and clusters

To access the actions

1. Connect the console to the management server.
2. In the **Navigation** pane, click **Microsoft Exchange servers**.
3. The actions are performed by clicking the corresponding buttons on the toolbar.

Registering Exchange servers and clusters on the management server

Registering on the management server allows machines running Exchange servers to be available for monitoring the activities related to the data protection. To safely back up data of an Exchange cluster, all cluster nodes have to be registered on the management server.

Registration provides a trusted relationship between the agent, residing on the Exchange server (or on the Exchange cluster node), and the management server.

To	Do
Add a new Exchange server to the management server	Click **Add a machine to AMS**. In the **Add machine** window, specify: 1. The name or IP address of the machine running Exchange server. 2. The administrator's user name and password.

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Add multiple Exchange servers	Click **Add multiple machines**. In the **Add multiple machines** window, specify the machines running Exchange servers to add to the management server. You can add machines by: ▪ Machine names or IP addresses. ▪ Exchange server application installed on the machines. ▪ Browsing the network. ▪ Browsing an Active Directory domain. ▪ Importing the list of the machines from .txt or .csv files. For details, see the "Specifying the list of machines" section of the installation documentation.

The management console addresses to the agent and initiates the registration procedure. Because registration requires the agent's participation, it cannot take place when the machine is offline.

An additional agent installed on a registered machine becomes registered on the same management server automatically.

Other operations

To	Do
Create a centralized backup plan with the selected Exchange server or cluster as a source	Click **Back up**. On the **Create backup plan** page, specify the location for storing backups and set the backup schedule.
Recover data to the selected Exchange server or cluster	Click **Recover**. On the **Recover data** page, select the backed up data and the destination to recover the data to.
Connect to the selected machine directly	Click **Connect directly.** Establishes a direct connection to the machine running Exchange server. Enables to administer the server and perform direct management operations, such as creating and managing local backup plans, tasks, and personal vaults.
Update the license for the selected Exchange server's agent	Click **Change license**. The reasons for changing a license include: ▪ Switching from a trial to a full product version. ▪ Enabling Acronis Deduplication.
View detailed information on the selected Exchange server	Click **Details**. In the **Exchange server details** window, examine information on the Exchange server or cluster.
View the log entries of the selected Exchange server	Click **Log**. The **Log** view will display a list of the log entries related to the selected Exchange server or cluster.

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Delete the selected Exchange server from the management server	Click **Delete machine from AMS**. As a result, the backup plans that have centralized origin are removed and shortcuts to centralized vaults are deleted from the server. If the server is not available at the moment, these actions will be performed as soon as the server becomes available to the management server.
Update all information related to the selected Exchange server	Click **Synchronize**. The management server will query the machine and update the management server databases with the most recent information. Along with synchronizing, the refresh operation will be performed automatically in order to update the list of the Exchange servers.
Refresh a list of Exchange servers	Click **Refresh**. The management console will update the list of Exchange servers from the management server with the most recent information. Though the list of servers is refreshed automatically based on events, the data may not be retrieved immediately from the management server due to some latency. Manual refresh guarantees that the most recent data is displayed.

7.2 Exchange server or cluster details

The **Details** window (also duplicated on the information panel in the **Microsoft Exchange Servers** view) aggregates all information on the selected Exchange server or cluster.

Cluster nodes

This tab displays all nodes of the selected Exchange cluster, their states, and the agent availability.

Here, you can register Agent for Exchange on the management server (if not registered) or update the agent for each cluster node. Click the node name or its IP address to view all of the information about the node.

Cluster

This tab lists all of the information about the selected Exchange cluster: its name, IP address, number of cluster nodes, cluster configuration type, etc.

Server

The tab provides information about the agent installed on the machine and the system information about the machine itself.

Backup plans and tasks

Displays a list of the plans (both local and centralized) and tasks existing on the selected machine.

Operations

For the list of the operations available with machine's backup plans and tasks, see "Actions on backup plans and tasks".

Filtering and sorting

Filtering and sorting of the backup plans and task is performed as described in "Sorting, filtering and configuring table items".

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Progress

The **Progress** tab lists all of the selected machine's activities and tasks that are currently running. The tab provides information about task progress, elapsed time and other parameters.

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8 Backing up and recovering data of Exchange clusters

This feature is used only in advanced editions of Acronis Backup & Recovery 11.5 (p. 6).

The main idea of Exchange clusters is to provide high database availability with fast failover and no data loss. Usually, it is achieved by having one or more copies of databases or storage groups on the members of the cluster (cluster nodes). If the cluster node hosting the active database copy or the active database copy itself fails, the other node hosting the passive copy automatically takes over the operations of the failed node and provides access to Exchange services with minimal downtime. Thus, the clusters are already serving as a disaster recovery solution themselves.

However, there might be cases when failover cluster solutions cannot provide data protection: for example, in case of a database logical corruption, or when a particular database in a cluster has no copy (replica), or when the entire cluster is down. Also cluster solutions do not protect from harmful content changes, as they usually immediately replicate to all cluster nodes. By backing up the cluster data with Acronis Backup & Recovery 11.5 for Microsoft Exchange, you can safely protect the clustered data: storage groups, databases, mailboxes, and public folders.

Acronis Backup & Recovery 11.5 provides protection for the clustered data regardless of its placement within the cluster. This means that even if the data being backed up changes its location within the cluster (for example, if mailbox role is moved to another server due to a switchover or a failover), the software will track all relocations of this data and safely back it up.

Cluster-wide protection is useful in the event some of the cluster nodes go offline, unless the backed up data becomes completely unavailable, or backup plan configuration explicitly prohibits the protection to run on the remaining nodes (if you select to back up only the selected node, for example).

8.1 Supported Exchange cluster configurations

Acronis Backup & Recovery 11.5 supports the following Exchange cluster configurations.

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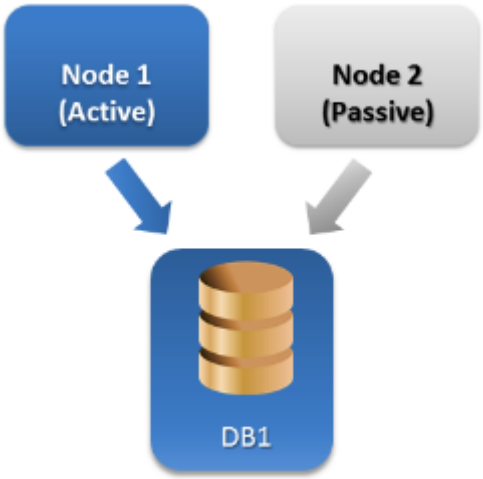
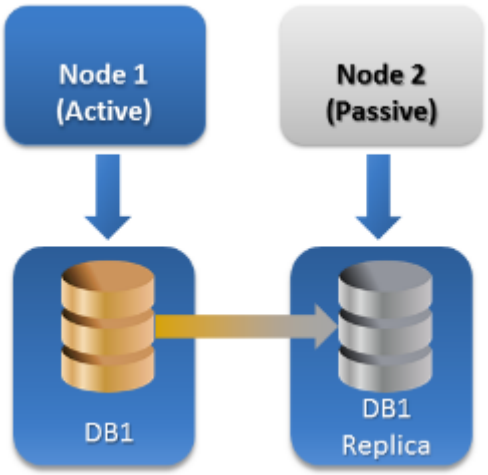
Exchange 2003 Cluster and Single Copy Cluster (SCC) for Exchange 2007

Both configurations are failover cluster solutions based on a shared storage. Each of them uses a single copy of a storage group on storage that is shared between the cluster nodes. Only one cluster node can access (manage) shared data at a time. The node that is currently managing shared data is called an active node. Other nodes are called passive or standby.



Cluster Continuous Replication (CCR) for Exchange Server 2007

CCR is a failover cluster solution based on a non-shared storage. It uses two copies (active and passive) for each storage group. Each copy is hosted on its own node. The copy that is currently in use is called active, and the node hosting this copy is called the active node. The passive copy is created and maintained on the passive node using continuous and asynchronous log shipping technology.



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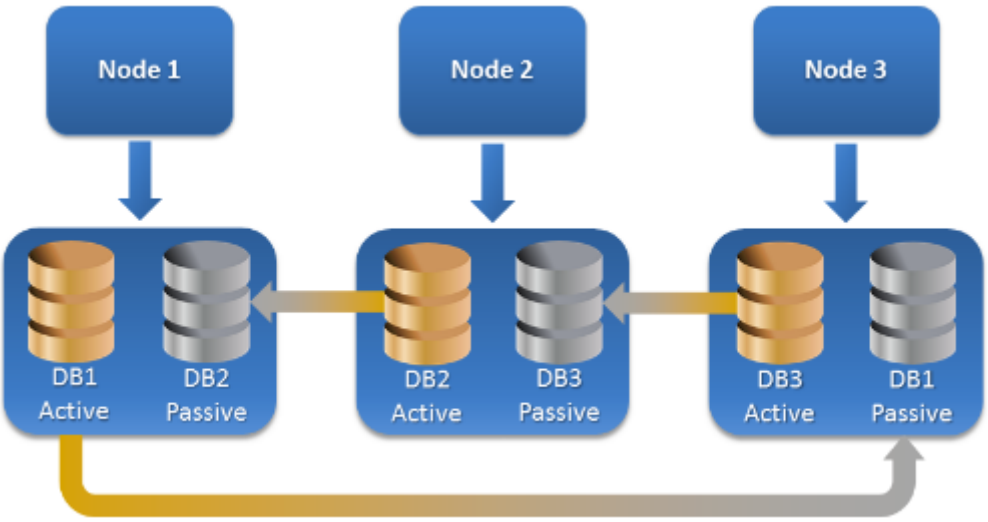
Database Availability Group (DAG) for Exchange Server 2010

DAG is a failover cluster solution providing high availability and site resilience. DAG uses the combination of two continuous replication technologies found in Exchange 2007: Cluster Continuous Replication and Standby Continuous Replication. DAG is a group of up to 16 Exchange 2010 Mailbox servers. Any node can host a copy of mailbox database from any other node. Each node can host passive and active database copies. Up to 16 copies of each database can be created.



8.2 How many agents are required for cluster data backup and recovery?

For successful data backup and recovery of a cluster Agent for Exchange has to be installed on each node of the Exchange cluster.

What happens with backup if the Agent for Exchange is not installed on all nodes?

If the Agent for Exchange is not installed on all cluster nodes (for example, the agent was manually uninstalled from one of the cluster nodes):

- The backup task completes with a warning, if the data selected for backup is hosted on the node with the Agent for Exchange installed.
- The backup task fails with error, if the data selected for backup is hosted on the node without the Agent for Exchange installed.

8.3 Exchange clusters on a management server

Exchange clusters are browsed and managed in the same way as any individual Exchange servers (in the **Microsoft Exchange servers** (p. 43) view of the management server).

You manage a cluster as a whole rather than as a set of nodes. When selecting the cluster data for backup (or browsing cluster data in the Data view), the data is displayed as a single instance even if multiple copies of the data are available within the cluster.

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Availability of the management server

The management server's availability is mandatory for creating and editing the centralized backup plans, since the management server deploys the backup plan to every node of the cluster. However, its availability is not necessary to run backup and recovery tasks.

8.4 Backing up the Exchange cluster data

Normally, clustered data is backed up by creating a backup plan on the management server (centralized backup plan). However, if you need to back up a specific data that is hosted entirely on a single cluster node, you can connect to this node directly and create a regular (local) backup plan. The drawback of this approach is that the backup task will fail if the data migrates to another cluster node or if the node becomes unavailable.

To configure backup of Exchange cluster data

1. Prerequisites:
   a. Install Agent for Exchange on each node of the Exchange cluster.
   b. Register all of the agents on the management server, either during installation or later.
2. Connect the console to the management server.
3. Click **Create backup plan**.
4. Under **What to back up**:
   a. Click **Show access credentials, exclusions**. In the **Access credentials**, specify the credentials required to access the source data.

      Details. To access the Exchange cluster data, a domain user account that has administrative privileges on each of the cluster nodes is required.

      When entering the name of an Active Directory user account, be sure to also specify the domain name (DOMAIN\Username or Username@domain).
   b. Click **Items to back up**.

      In **Data to back up**, select one of the following:

      - **Microsoft Exchange information store** to back up Exchange databases or storage groups
      - **Microsoft Exchange mailboxes** to back up individual mailboxes.

      In the catalog tree below **Data to back up**, select the Exchange cluster and specify data items to back up. The cluster databases or storage groups are displayed as single instances regardless of the number of copies they have within the cluster.
5. Under **Where to back up**, select the backup destination. The backups can be saved to any type of storage supported by Acronis Backup & Recovery 11.5, except for Acronis Online Backup Storage, Acronis Secure Zone and removable media.

   Naming the archive. Acronis Backup & Recovery 11.5 generates a common name for the new archive and displays it in the **Name** field. The name looks like *[Application Instance Name]_Archive(N)*, where the *[Application Instance Name]* variable is a substitution for the Exchange server's or cluster's name, and *N* is a sequence number. If you are not satisfied with the automatically generated name, you can construct another name. Note that the use of the *[Application Instance Name]* variable at the beginning of the name is mandatory.
6. Under **How to back up** in the **Backup scheme**, select the required scheme and specify its settings as described in the "Backup schemes" (p. 22) section.
7. In the **Cluster backup mode** select one of the following:
   - **Active**

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This mode is available for selection if Agent for Exchange is installed on each node of the cluster.

In this mode, the software will back up data from the active copy of the database or the storage group. If the active copy is not available at the moment, the backup will fail.

Backing up data from active copies may slow down the Exchange server performance, but the backed up data will be in the most up-to-date state.

- **Passive (replica)**

  This mode is available for selection if Agent for Exchange is installed on each node of the cluster.

  In this mode, the software will back up data from one of the available passive database or storage group replicas (if several). Also, specify what to do if all the passive copies are unavailable at the moment: either **Back up active** copy, or **Fail the task**.

  Backing up passive copies does not affect the Exchange server performance and allows you to extend the backup window. However, passive copies may contain information that is not up-to-date, because such copies are often set to be updated asynchronously (lagged).

- **The selected node**

  This mode is available for selection if all items selected for backup are hosted on a single node or if the console is directly connected to the agent.

  In this mode, you specify the cluster node manually. Choose this mode only if you are absolutely sure that the data will not be relocated to another cluster node. If the data changes its location before or during the backup, the task will fail.

8. Under **Plan parameters**, click **Plan's credentials** and specify the user account under which the plan will run.

   When entering the name of an Active Directory user account, be sure to also specify the domain name (DOMAIN\Username or Username@domain).
9. For information about specifying the rest of backup plan settings (replication, retention, and validation of backups), refer to the product help system or guides for Acronis Backup & Recovery 11.5 Advanced Editions.
10. Click **OK** to create the backup plan.

8.5 Recovering data to the Exchange cluster

To recover the data, the administrator can connect the console either to the management server, or to any cluster node directly.

To configure data recovery to the Exchange cluster

1. Connect the console to the required cluster node, and click **Recover**.
2. Under **What to recover**, select the data to recover as described in the "Selecting data to recover" (p. 31) section.
3. Under **Where to recover**, in **Browse**, specify the cluster to recover the data to. After you specify the cluster and click **OK**, Acronis Backup & Recovery 11.5 automatically selects the cluster node that will perform the recovery. The node's name is displayed in the **Browse** field.

   Notes for recovering storage groups or databases:

   - **Original location**

     The original path for a storage group or a database means the same Exchange cluster from which the storage group or database has been backed up (regardless of the cluster nodes

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and the number of available database copies). If the same storage group or database exists in the original path, it will be overwritten with one from the backup.

When recovering databases to the original path in Exchange 2010 DAG configuration, consider the following:

- If the database being recovered exists in the original path, the database is always recovered to the cluster node hosting the active database copy. Other nodes are not available for selection. The recovered database will be replicated to other nodes automatically.
- If the database being recovered does not exist in the origin path, the node where the database was active at the moment of backing up is selected. Other nodes are also available for selection. The selected node will host the active database copy after recovery. The database replication is configured in Exchange.

When recovering storage groups to the original path in the Exchange 2003 and 2007 cluster configurations, the active node is preselected for recovery. Other nodes are not available for selection.

- **Custom**

  When recovering a databases as a new database in Exchange 2010 DAG configuration, consider the following:

  - If the database being recovered exists in the target path, the database is always recovered to the cluster node hosting the active database copy. Other nodes are not available for selection. The recovered database will be replicated to other nodes automatically.
  - If the database being recovered does not exist in the target path, the first available node in the list of cluster nodes is selected. Other nodes are also available for selection. The node you select will host the active database copy after recovery. The database replication is configured in Exchange.

  For Exchange 2003 and 2007 cluster configurations, when recovering storage groups to a custom path, the active node is always selected for recovery. Other nodes are not available for selection.

Notes for recovering mailboxes and public folders:

- **Microsoft Exchange Server**

  When recovering mailboxes, public folders or their contents to the to the Exchange cluster, the settings you should perform are the same as those described in the "Recovering mailboxes, public folders and their contents to the Exchange server" (p. 37) section.

4. Under **When to recover**, specify when to perform the recovery.
5. Click **OK** to start the recovery task (if it is set to perform immediately) or save the recovery task (if it set to perform later).

8.6 Cluster credentials

To access the Exchange cluster data, a domain user account that has administrative privileges on each of the cluster nodes is required. The credentials are specified when adding a cluster node to the management server, during backup plan creation, or during recovery task creation.

Specify:

- **User name**. When entering the name of an Active Directory user account, be sure to also specify the domain name (DOMAIN\Username or Username@domain).

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- **Password**. The password for the account.

If the credentials are detected as missing or invalid, you will receive the respective alert. To provide valid credentials, click **Fix the issue** in the alert. Also, you can provide cluster credentials at the next backup or recovery.

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9 Exchange-specific backup options

9.1 Metadata collection

This option applies to database backups.

This option defines the amount of metadata collected during a backup. The more detailed the metadata is, the longer the backup creation takes. However, the browsing and recovery of individual e-mails and other items contained in the mailboxes will be faster.

If a database was backed up with a non-preset value then, in order to access individual e-mails, the software has to open the database directly from the backup and apply transaction logs to the database. This process may take considerable time depending on the number of transaction logs contained in the backup.

The preset is: **Include e-mails**

To specify the level of detail

Select one of the following

- **Include list of mailboxes**

  The metadata will be the least detailed and the backup will be the fastest. Only mailboxes and public folders can be accessed without opening a database.
- **Include mailboxes and folders**

  Individual folders within mailboxes and public folders can be accessed without opening a database.
- **Include e-mails**

  The metadata will be the most detailed and the backup will take the longest time to complete. Individual e-mails and other items within mailboxes and public folders can be accessed without opening a database.

9.2 Exclusions from mailbox backup

This option applies to mailbox-level backups.

The option defines which mailbox items to skip during the backup process and thus exclude from the list of backed-up items.

To specify which files and folders to exclude:

Set up any of the following parameters:

- **Exclude "Deleted Items" folders**

  Select this check box to skip the **Deleted Items** folders and all their content.
- **Exclude "Junk E-Mail" folders**

  Select this check box to skip the **Junk E-Mail** folders and all their content.
- **Exclude "Sent Items" folders**

  Select this check box to skip the **Sent Items** folders and all their content.
- **Exclude items older than:** ...

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Select this check box and specify the age of backed up items. The items older than the specified age will be skipped from backup.

- **Exclude attachments larger than:** ...

  Select this check box and specify the upper size limit for the backed up attachments. The attachments whose size is greater than the specified value will be skipped during backup.

- **Exclude attachments matching the following criteria**:

  Select this check box to skip the e-mail attachments whose names match any of the criteria specified by file masks. Use the **Add**, **Edit**, **Remove** and **Remove All** buttons to create the list of file masks.

  You can use one or more wildcard characters * and ? in a file mask:

  The asterisk (*) substitutes for zero or more characters in a file name; for example, the file mask Vid*.avi yields files such as Vid.avi and Video.avi. The *.avi mask yields all .avi files.

  The question mark (?) substitutes for exactly one character in a file name; for example, the file mask App?.exe yields files such as App1.exe and Apps.exe — but not the files App.exe or App11.exe

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10 Glossary

C

Checkpoint file

A file that accompanies an Exchange transaction log (p. 58) stream and tracks how far Exchange has progressed in writing logged information to the database file.

Circular logging

A Microsoft Exchange Server logging mode. In this mode, Exchange overwrites and reuses the transaction log files (p. 58) rather than creating new log files.

Continuous Data Protection (CDP)

Continuous Data Protection (CDP) allows reverting the protected data to any point in time.

In Acronis Backup & Recovery 11.5, CDP is a backup scheme applicable to Microsoft Exchange information stores (p. 57), storage groups (p. 58), and databases (p. 56). In this scheme, you specify when to perform full backups. In addition, the transaction log files (p. 58) are backed up automatically as soon as they are closed by Exchange. Having both full backups and transaction log backups (p. 58), you can select any point in time to revert the Exchange data to.

Copy-only backup

Creating a full backup of a Microsoft Exchange information store (p. 57), storage group (p. 58), or database (p. 56) without truncating (p. 58) the transaction log files (p. 58). Use this backup method to obtain a full backup without disturbing continuous backup plans. For example, if a database is protected with CDP (p. 56), you can do a copy-only backup of the database for transportation to an off-site location, testing, analysis or other purposes.

Copy-only backup and express full backup (p. 57) are mutually exclusive. You can select only one of these methods when creating a backup plan.

D

Database-level backup

A backup that contains Exchange databases (p. 56) and Exchange-related information from Active Directory. When performing backup at a database level, Acronis Backup & Recovery 11.5 backs up database files, transaction log files (p. 58) and other associated files at a file level from a snapshot taken using Volume Shadow Copy Service (VSS). The Exchange server structure, cluster structure, user accounts and user's settings are extracted from Active Directory.

The main purpose of this backup type is disaster recovery of Exchange. You can also recover mailboxes, folders, e-mails, contacts, tasks, notes and other items directly from database backups.

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E

Exchange database

There are two types of Exchange databases.

- A **mailbox database** stores contents of mailboxes. Mailbox content is private to the mailbox user.
- A **public folder database** stores public folders data. Public folder content is shared among multiple users.

Physically, the data stored in the files of the following types:

- Database file (.edb)
- Transaction log files (p. 58) (.log)
- Checkpoint files (p. 56) (.chk).

Express full backup

A method of creating a full backup of Exchange information stores (p. 57), storage groups (p. 58), or databases (p. 56). With this method, Acronis Backup & Recovery 11.5 backs up only the changes that have occurred since the previous full backup. The data that has not changed is replaced with links to it.

As compared to regular full backup:

- Express backups are created faster and occupy less space.
- The number of I/O requests to the production server is much less.

Express full backup and copy-only backup (p. 56) are mutually exclusive. You can select only one of these methods when creating a backup plan.

I

Information store (Exchange store)

Microsoft Exchange Server stores its data in a single repository called information store (in Exchange 2003/2007) or Exchange store (in Exchange 2010). The primary logical components of the information store are storage groups (p. 58) (for Exchange 2003/2007 only) and Exchange databases (p. 56).

M

Mailbox-level backup

A backup that stores contents of Exchange mailboxes and/or public folders. Acronis Backup & Recovery 11.5 accesses the contents using Messaging Application Programming Interface (MAPI), so backing up multiple mailboxes may take a long time. Backing up at a mailbox level makes sense when you need to frequently back up a small number of mailboxes. Otherwise, consider a database-level backup (p. 56).

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P

Point of failure

The point in time when the most recent transaction log file (p. 58) existing in Exchange was created. This is the most recent state Exchange data can be reverted to.

S

Storage group

In Exchange 2003/2007, a storage group is a logical container for Exchange databases (p. 56), the associated transaction log (p. 58), checkpoint (p. 56), and other system files. All databases in a storage group share a single log stream. A storage group is the basic unit for backup and recovery.

In Exchange 2010, the notion of a storage group is discontinued. Therefore, you can select individual databases for backup. Each database will be backed up along with the necessary associated files.

T

Transaction log backup (Exchange)

A transaction log backup stores transaction log files (p. 58) along with checkpoint files (p. 56).

At first backup, Acronis Backup & Recovery 11.5 creates a regular full backup of the corresponding Exchange information store (p. 57), storage group (p. 58) or database (p. 56). After that, only the log files and checkpoint files are backed up. The transaction log files are truncated (p. 58) after each successful backup. Circular logging (p. 56) must be disabled in Exchange, otherwise the backups will fail.

Having transaction log backups, you can revert Exchange data to any point in time. First, the data will be recovered to the state saved in the full backup. Then, the transaction log will be applied.

Transaction log file (Exchange)

Transaction log files (.log) store all changes made to an Exchange database (p. 56) or storage group (p. 58). Before committing any change to a database file, Exchange logs the change into a transaction log file. Only after the change is securely logged, it is then written to the database. This approach guarantees reliable recovery of the database in a consistent state in case of sudden database interruptions.

Each log file is 1024 KB in size. When an active log file is full, Exchange closes it and creates a new log file. A set of sequential log files is called a log stream. Each database or storage group has its own log stream.

Transaction log file truncation (Exchange)

The process of deleting transaction log files (p. 58). Exchange truncates the transaction log files:

- After a successful full backup of the corresponding Exchange information store (p. 57), storage group (p. 58) or database (p. 56) (excepting the copy-only (p. 56) backup).
- After a successful transaction log backup (p. 58).

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In either case, Exchange deletes only those files that are older than the checkpoint. This means that transactions from these files have already been committed and written to databases.

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